DOCUMENT RESUME

ED 307 847 IR 013 812

TITLE	Effective Teaching at a Distance. Conference Report (1st, Madison, Wisconsin, August 5-6, 1985).
INSTITUTION	Wisconsin Univ., Madison. Dept of Continuing and Vocational Education.
PUB DATE	Aug 85
NOTE	92p.; For reports on the 1986-88 conferences, see IR 013 813-816.
PUB TYPE	Collected Works - Conference Proceedings (021) -- Information Analyses (070) -- Viewpoints (120)
EDRS PRICE	MF01/PC04 Plus Postage.
DESCRIPTORS	Access to Education; *Adult Education; *Distance Education; *Educational Research; Educational Technology; *Educational Trends; *Instructional Design; Program Administration

ABSTRACT

This report provides a brief description of a 1985 conference on distance education together with the papers presented by six of the seven keynote speakers. It is noted that, in addition to these papers, the conference included 30 application sessions which allowed the 182 participants to select issues and topics to explore in small groups. The keynote papers included in this report are: (1) "Issues in Distance Education," in which Jerold Apps examines three modes of learning in distance education--technical learning, learning for meaning, and emancipatory learning; (2) "Adult Learning at a Distance," in which Michael Moore surveys some current distance learning programs and considers the factors that have made these programs effective and successful; (3) "Heuristics of Instructional Design for Distance Education," in which Terry L. Gibson presents some general rules or strategies for the effective design of instructional programs for distance learners; (4) "Administration of Distance Education Systems," in which Donald McNeil considers the requirements for a successful distance education program in terms of personnel, policies, and resources; (5) "Where There's a Will There's a Way," in which Kathryn S. Atman discusses some of the theory and research that may contribute to the achievement of academic success by distance learners; and (6) "Distance Learning: The Near Future," in which Michael Moore considers the long term developments that may occur in both distance education and the media used to carry out these educational programs. A theoretical model for goal accomplishment is illustrated and four of the six papers include references. (EW)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

X This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

ED307847

EFFECTIVE TEACHING AT A DISTANCE

August 5-6, 1985
Madison, Wisconsin
USA

Joint Sponsors:

University of Wisconsin-Madison, Department of Continuing and Vocational Education

The Wisconsin Educational Communications Board

The Wisconsin Board of Vocational, Technical, and Adult Education

The University of Wisconsin Extended Degree Program

University of Wisconsin-Extension

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Terry Gibson

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

IR013512

BEST COPY AVAILABLE

EFFECTIVE TEACHING AT A DISTANCE CONFERENCE REPORT
University of Wisconsin-Madison, Wisconsin
USA

The Effective Teaching at a Distance Conference was held in Madison, Wisconsin on August 5 and 6, 1985. In attendance were 182 individuals from 23 different states who were interested in improving the quality and effectiveness of distance learning. The conference included seven keynote addresses and 30 application sessions which allowed participants to select issues and topics to explore in small groups.

Included in this report are papers or articles by most of the keynote speakers. This material was at the heart of the conference and provides a good overview of the kinds of issues, problems, solutions, and opportunities which were discussed. The application sessions were divided into four strands: administration and support; learners and learning at a distance; designing distance learning programs; and teaching at a distance.

Also included in this report is an order form from Instructional Communication Systems of the University of Wisconsin-Extension. Cassette tapes are available for all the keynote presentations. Use the enclosed order form to purchase the tapes directly from ICS.

We hope this material will be useful for you. The 1986 Effective Teaching at a Distance Conference will be held in Madison, Wisconsin on August 6-8.

Terry Gibson, Ph.D.
Associate Professor
264 Teacher Education Building
University of Wisconsin-Madison

TABLE OF CONTENTS

1. Issues in Distance Education
Dr. Jerold Apps
Professor
Department of Continuing and Vocational Education
University of Wisconsin-Madison
Madison, WI 53706

2. Adult Learning at a Distance
Dr. Michael Moore
Senior Counselor
Open University
Walton Hall
Milton Keynes
United Kingdom

3. Heuristics of Instructional Design for Distance Education
Dr. Terry L. Gibson
Associate Professor
Department of Continuing and Vocational Education
University of Wisconsin-Madison
Madison, WI 53706

4. Administration of Distance Education Systems
Dr. Donald McNeil
Provost
American Open University
New York Institute of Technology

5. When There's A Will There's A Way
Dr. Kay Atman
Associate Professor
University of Pittsburgh
Pittsburgh, PA 15219

6. Distance Learning--The Near Future
Dr. Michael Moore
Senior Counselor
Open University
Walton Hall
Milton Keynes
United Kingdom

8-5-85

Issues in Distance Education

by
Jerold W. Apps

On behalf of the Department of Continuing and Vocational Education, let me also welcome you. I hope you find this conference useful as well as thought provoking.

My task is to examine issues in distance education, a rather impossible assignment in a half-hour. Rather than trying to identify a broad range of issues, I would like to concentrate my brief comments on but one issue that is of particular concern to me.

Education becomes what the system provides.

In my comments this morning, I want to stress the use of electronic media in distance education. By doing so, I do not suggest traditional correspondence study relying heavily on print media is unimportant. I simply believe the future of distance education will rely heavily on the electronic media.

The concept of distance education has gained new import with the development of such electronic media as television, computers, and satellite communication. We are at a time, if we can figure out the financing, when an instructor can be in one part of the world and his or her students can be in another, and yet they can interact with each other and see each other while they are doing it. This is truly an exciting time for everyone interested in education, particularly those of us who are interested in the education of adults.

Scholars of communication history tell us we have moved through three language phases. First there was oral language when all communication was word of mouth from one person to another. Second, with the invention of the printing press we saw a widespread written language. And more recently we have moved to a broadcast language which has several of the characteristics of prehistoric oral language.

Some would argue that these changes have had rather neutral effects on language, on communication and on educational activity.

Others, myself included, see changing the means of providing messages profoundly effecting the nature of the messages themselves.

You all recall Marshall McLuhan's 1964 work where he proclaimed that the media is the message.

We have an interesting dilemma. As electronic language replaces written language we are developing a group of adult learners in this country who have been greatly influenced by the electronic media. According to Neal Postman, a professor of communication at New York University, American children watch, on the average, five thousand hours of television before they start school. They will have watched sixteen thousand hours of television by the end of high school. In the first twenty years of a person's life he or she will watch

eighty-eight hundred thousand television commercials. The point of Postman's argument is we are a society where "the printed word has moved to the periphery of our culture and the electronic image has taken its place at the center." Electronically "educated people," and the facts clearly show that young people spend more time with television than they do with teachers, are educated to become critically disabled, unable to discern truth from lies, unable to examine arguments carefully, and influenced more by symbolism than by logic.

Ivan Illich 1983, has an even more severe criticism of the effects of the electronic media, "The machine like behavior of people chained to electronics constitutes a degradation of their well-being and of their dignity, which for most people in the long run becomes intolerable. Observations of the sickening effect of programmed environments show that people in them become indolent, impotent, narcissistic and apolitical. The political process breaks down because people cease to be able to govern themselves, they demand to be managed" (pg. 5).

John Wicklein 1979, another writer in this area and another challenger of the effects of our present emphasis on electronics, says this, "If we absorb information and entertainment, do our jobs, transact our business, and engage in personal interchange via the home communications set, how will this affect our social relationships? Will we become stay-at-homes, relating mostly to a machine, or will the interactions on the machine lead us into more personal contacts outside the home" (pg. 13).

Of course there are many positive affects of the potential use of the electronic media in distance education. We can provide simultaneous interaction between learners and teachers without them present in the same room. This is certainly one of the positive potentials for the use of the electronic media in distance education. Through the use of electronic media in distance education teachers are able to, in a way not before realized, through correspondence study and other approaches to distance education to <u>respond</u> to learners rather than attempting to <u>direct</u> learners.

But back to my original point, <u>education becomes what the system provides</u>. Too often it seems that we in education see the new electronic media as a way of delivering information more effectively and efficiently. We become caught up with what we, too often in continuing education at least call information transfer or delivering information. We argue that this is appropriate for continuing education because of the information explosion that the world is experiencing. We argue that thousands are obviously going to be out-of-date without new information. So education becomes providing information -- what the system can most easily provide.

Let me suggest that this approach to looking at distance education, and in fact this approach to looking at any form of education, is extremely narrow and indeed inappropriate.

We can understand better what I am talking about by examining three modes of learning. The differences in these three modes of learning suggest fundamentally different activities for educators and likewise call for quite different responses from learners.

The first mode is called Technical Learning. Technical learning is acquiring information and skills, is directly related to improving performance of tasks, and is generally tied to specific, identifiable outcomes. Providing for "Technical Learning" is an important activity in continuing education. And providing information is a necessary part of technical learning. Naisbitt (1982), in his popular book, Megatrends summarized the problem of technical learning well when he wrote, "We are drowning in information but starved for knowledge . . . uncontrolled and unorganized information is no longer a resource in an information society. Instead, it becomes the enemy of the information worker" (p. 24).

The second mode of learning, Learning For Meaning begins to consider the question Naisbitt raises about drowning in information. This second mode of learning also defines learning differently. Whereas "Technical Learning" emphasizes accumulation of information and skills, "Learning for Meaning" emphasizes making sense out of what is learned. Learning for meaning suggests searching for the meaning of information, reflecting on one's personal experiences, searching for the meaning of personal interactions with colleagues, and deriving meaning from day-to-day work situations.

The emphasis is not an accumulating new information, although this mode of learning does not deny the importance of new information. The emphasis is on asking such questions as: (a) is this information accurate, (b) does this information fit my situation -- can I apply this information, (c) how does this information relate to other information I have, (d) do I really need to be bothered with this information, and the extremely important question: (e) what are the ethical considerations surrounding this information?

This second mode of learning stresses the importance of personal information, that which we gain from work, from contact with other people, from attempting to solve problems, from reflection on our life situation. This learning mode offers an alternative to the view that all information comes from the outside, from some expert, for instance.

Learning for meaning also emphasizes putting together facts with feelings. In our educational efforts we are rediscovering the relationship of scientific information with a heavy emphasis on facts, and those perspectives that can be gained from the arts and the humanities. We are rediscovering the power of the story, the visual image, and poetry as a way of broadening perspective, and often adding context to factual material.

The third mode of learning is called Emancipatory Learning. Emancipatory learning is learning which frees people from personal, institutional, or environmental forces which prevent them from seeing new directions, from gaining control of their lives, of their society, and their world.

Emancipatory learning has three dimensions:

(1) Critical
(2) Integrative
(3) Action

The critical dimension involves questioning present situations, examining assumptions, and analyzing present information. Another way of describing the critical dimension of emancipatory learning is to say that emancipatory learning involves increasing one's awareness. As the British educator, R. W. K. Paterson (1979) wrote: "To foster the development of the adult as a person . . . to educate him [or her], is to extend the scope and enrich the quality of . . . awareness. . ." (p. 67). Paterson says that any educational activity which does not involve development of awareness cannot be properly called adult education.

Becoming aware also means drawing widely from a variety of discipline sources, from one's experience, and from one's own feelings. Philosopher Krishnamurti (1953) reminded us: "We may be highly educated, but if we are without deep integration of thought and feeling, our lives are incomplete, contradictory and torn with many fears; and as long as education does not cultivate an integrated outlook on life, it has very little significance" (p. 11).

How does one encourage awareness? How do we cultivate awareness in ourselves? How do we look more broadly at our work, at our play, at the totality of our lives? Roger Von Oech (1983), in a delightful book titled A Whack On The Side Of The Head says "We all need an occasional whack on the side of the head to shake us out of routine patterns, to force us to re-think our problems, and to stimulate us to ask new questions that may lead to other answers. Von Oech suggests several events that may lead to greater awareness: traveling to another country, failing to receive a merit salary increase, asking questions that are the reverse of what is ordinarily asked, and putting together two ideas that everyone says should not be put together (pp. 13-15). Asking "what if" questions sometimes helps us become aware. For instance, Von Oech asks:

--What if, life-expectancy were 200 years?

--What if, when you looked in a mirror, there became two of you?

--What if people didn't need sleep?

—What if you had seven fingers on each hand? Would you be able to wave and point at the same time? Would you have two finger opposing thumbs on each hand? If you did, would you have a better "grasp" of things?

Sometimes a sense of awareness strikes us when we least suspect.

Henry David Thoreau wrote these words in his journal:

I take incredibly narrow views,
live on the limits,
and have no recollection of absolute truth.
Mushroom institutions hedge me in.
But suddenly, in some fortunate moment,
the voice of eternal wisdom reaches me,
even the strain of the sparrow,
liberates me,
whets and clarifies my senses,
makes me a competent witness. (107)

The integration dimension brings together a variety of points of view. Integration brings together opposing positions. It examines the past and the present, and it of course includes one's own experiences -- one's own personal information plus one's feelings. The Spanish philosopher, Ortega y Gasset (1960) reminds us, "We need a complete perspective, with foreground and background, not a maimed and partial landscape, not a horizon from which the lure of the great distances has been cut away. Lacking a set of cardinal points, our footsteps lack direction" (p. 66).

The integration dimension also means tearing down the barriers that separate subject disciplines from each other, the barriers that prevent biologists from talking with philosophers, the walls that keep economists away from artists. Fritjof Capra (1975), in his delightful book, The Tao of Physics says the boundaries that surround discipline areas are imaginary ones. He writes, "In ordinary life, we . . . divide the world into separate objects and events. This division is . . . not a fundamental feature of reality. It is an abstraction devised by our discriminating intellect. To believe that our abstract concepts of separate "things" and "events" are realities of nature is an illusion" (p. 117).

Capra goes on to say, "Most of today's physicists do not seem to realize the philosophical, cultural, and spiritual implications of their theories. Many of them support a society which is still based on the mechanistic, fragmented world-view, without seeing the oneness of the universe which includes not only our natural environment but also our fellow human beings" (p. 298). How much of what Capra says applies to what we do as educators?

The result of this fragmentation of disciplines, this boxing and narrow labeling of information is a learner who is often not a part of what he or she is learning. John Muir, the naturalist, who had his roots here in Wisconsin, wrote about this problem. "Most people are on the world, not in it -- have no conscious sympathy or relationship to anything about them -- undiffused, separate, and rigidly alone like marbles of polished stone, touching but separate" (p. 313).

The integration dimension of emancipatory learning is a bringing together of information from various sources, and the merging of learners with what they are learning -- making the learning experience a totality, a oneness.

The third dimension of emancipatory learning is action. As adult educators, each of you is concerned that there be some action, some application of what is being learning. Emancipatory learning emphasizes action. Those who advocate emancipatory learning say it is not enough to read, to study, to participation in workshops and classes, to reflect -- but one must act on what one is coming to know. One thus must do more than accumulate information for the sake of accumulating it. Emancipatory learning proponents insist that one does not really come to know something until he or she has acted on it.

What is meant by action may disturb some of you. Action of course means applying what one is learning to one's work situation. But emancipatory learning's action dimension means that questions will be raised about work

situations, that old ways and some of the new ways proposed will be questioned. Emancipatory learning, by its nature, challenges the status quo.

And through the process of emancipatory learning, people become liberated from prevailing ideas, from fixed ways of thinking, and from present sets of assumptions.

Emancipatory learning has as its goal the development of autonomous learners who have a broad perspective on their lives, on their profession, and on how they view the world.

Implications for Distance Education

Several questions come to mind.

1. How can we conduct teaching at a distance to provide for the three modes of learning I've discussed --

(a) Technical Learning
(b) Learning for Meaning
(c) Emancipatory Learning?

2. What can we do to facilitate learning for meaning and emancipatory learning, given that we know how to provide for technical learning quite well?

3. What can we do to provide for positive learning using electronic media as a means, when increasing numbers of young adults are coming to us with inadequate skills in critical thinking, and careful analysis (created by the same media that we are using in distance education)?

4. Or, to be more positive, how can we more effectively use media in distance education given that an entire generation of adults has now grown up with television, and the next generation will have had considerable experience with computers as well.

University of Wisconsin-Madison

Conference on Effective Teaching at A Distance

Adult Learning at A Distance

Michael Moore

Adult Learning at a Distance

Michael Moore

A number of historical claims have been made for the invention and development of distance education in the form of correspondence teaching in the United States. The one I favor, attributes the principal credit to Bishop Vincent and his Chautauqua movement, in which during the 1870's and 1880's some 60,000 students were enrolled at any one time in courses of home study supported by correspondence instruction. The method was then taken from Chautauqua to Chicago when William Rainey Harper became the founding president of the new university in 1892. The earliest use I have found of the term "distance" in an educational context is in 1915, in William Lightly's description of Harper's work as "preparing students at a distance," and "long-distance learning."(1) This "Distance Education" in the form of correspondence was introduced into Wisconsin by Louis Reber who had been appointed in 1906 by President Van Hise, who had himself been a professor under Harper at Chicago, and the first head of correspondence instruction was William Lighty, later to become famous for his experiments in teaching by radio. So history is clear - the idea and even the term "learning at a distance" are by nomeans new, and their pedigree is especially well established at this university. Furthermore it is apparent that from the beginning at Chautauqua, through the early history of both the universities of Chicago and Wisconsin, distance education has been a well integrated part of the broad extension programs of those institutions, and at its best was recognized as performing an essential part of the outreach mission. To traditional correspondence we have now added teaching by an array of electronic media, especially radio/TV, broadcasting, video and audio-recordings, and more recently the personal computer. We have also vastly improved the techniques of designing and teaching by corres-

pondence - but I think it is worth emphasizing that we have not invented an entirely new educational approach in our new distance education systems. There is much to be learned, particularly about course design and problems of instruction from both the achievements and failures of more than 3/4 of a century of correspondence education both in this university and elsewhere. When we turn to the present we find an amazing renaissance of interest during the past decade in distance education and a new interest in its particular methods and techniques and a new awareness of its potential for meeting the needs of individual learners, but also its potential as a means of social and even national development.

Since you will spend the next two days discussing these issues in an exclusively Wisconsin context - or at the broadest in an American context, I would like to take a few minutes to give just a glimpse of the international nature of this new, post 1970, field of which distance education in Wisconsin is now inevitably a part.

The remarkable phenomenon which has been both the cause and in turn an effect of the renaissance in distance education has been the establishment throughout the 1970's and 80's of more than a dozen large, publicly funded, autonomous, distance teaching universities.(2)(3) Of course there have been important developments also in the extension departments of universities which have a primary face-to-face teaching mission, the University of Wisconsin among them. There have been important developments in the privately funded schools which use correspondence and other distance media, and significant contributions also have been made by organizations which rate education as an important but secondary mission - I am thinking in particular of the military

and of business and industrial training organizations.

However, what has brought distance education back into focus, causing educators here and elsewhere to take a new look at some old methods, has been the setting up and success of purpose-built distance education universities in Great Britain, in Spain, Israel, West Germany, Canada, Thailand, Pakistan, The Netherlands, Venezuela, Costa Rica, SriLanka, Japan - and according to a decision taken last month, in France. The first of these, the British Open University, enrolled its first students in 1971. There are now over 100,000 students in its distance education programs. The most recent, in Japan, plans to enroll 10,000 students in 1985. The biggest, the Thammathitat University in Thailand, has an enrollment of 110,000 and the smallest, Canada's Athabasca has 6,600 students. The main point to emphasize about these institutions is that they are all degree awarding universities, independent of any other institution in such important matters as finance, in what they teach and accredit, and in who they "hire and fire." They share certain other important characteristics: (1) The set-up costs of such institutions are considerable and so they have all been established with large amounts of government money, which means their establishment has been in every case a high level political decision. It was the Prime Minister of Great Britain, and is now the President of France who ultimately determined that distance teaching universities would be established in those countries. (2) They are all multi-media distance teaching institutions. Over all, the broad instructional approach is the same, consisting of an integrated teaching package, including some form of printed study guides, correspondence assignments, supporting

print, broadcast and recorded materials, and in all cases a minimal face-to-face tutorial group. This face-to-face support is usually provided in some form of local study centers. There are 55 such centers in Spain, 18 in The Netherlands none more than 25 miles from any student's home, 36 in Israel, 77 in Thailand, and over 200 in the U.K.

The success of these distance teaching universities has had far reaching effects on both the teaching of courses and the curriculum in traditional higher and adult education; and has also encouraged many traditional educational institutions to introduce distance education into their adult and continuing education programs or where such programs already existed, to develop them further. Examples are legion. In Scandinavia alone distance education has been introduced to provide off campus education in universities in Sweden, Norway, Finland and Denmark. Some of the best examples of this are seen in Australia. At 5 of Australia's 19 universities, the students taught at a distance comprise a significant proportion of the total student body. In two, Deakin University and University of New England, distance students make up over half the total (55% to 66%), (2,645 and 5,590 respectively). In New England students at a distance are taught by the same academic staff, subjected to the same examinations, and rewarded with the same degrees as those who learn on campus. This New England model has been copied in Zambia, Fiji, Jamaica, and Papua New Guinea. At Deakin University course materials are designed for off-campus students by a team of the same academics which teach on campus assisted by other technical specialists. I mention the Australia experience because the political view on university education and

continuing education in Australia is I suspect rather closer to Wisconsin's than is that of any other country I will mention, and I suggest that anyone who considers redesigning Wisconsin's systems to bring about wider distance education might do well to look very closely at the ways in which the Australians have approached the problem. A few other ways in which distance education has been adopted by conventional institutions are worth mentioning. In France, until now, 18 universities have distance teaching centers, but they share a common research and production unit at St. Cloud which acts as a consulting organization. In Sweden and elsewhere in Scandinavia, and throughout all of Eastern Europe, periods of study at a distance can be interchanged with periods of residential study on campus. In East Germany 20 of the 56 universities provide distance education, said to be equal in status to face-to-face study, and interchangeable for credit purposes. In West Germany two important research and development centers should be mentioned - DIFF in Tubingen and ZIFF in Hagen. The former acts as a national research and development center; the latter is formally part of the Fernuniversitat, but publishes research of more general interest including a valuable series of papers in English. The last country I will mention is People's Republic of China. The Chinese have, as you might expect, the largest single distance education system for higher education in the world. The Radio-Television University consists of a central institute where courses are designed and materials produced, to be broadcast by 28 local television stations. Tutorial groups are held in factories and other work places led by local academics, and students submit written assignments to these local tutors. There are some

1,000,000 students following 3-year university programs in science, technology, Chinese language, economics and management.

So, you see, even from the little that I have said that around the world a great deal is going on, especially at the university level, though by no means exclusively so. The large distance teaching universities have the resources to study their own work and to publicise it in a way that most other institutions which teach at a distance do not. An indication of the extent of activity outside the university sector can be gathered from some statistics gathered by the National Home Study Council in 1981. In that year there were approximately 250,000 people studying in American university and college correspondence programs; in private correspondence schools there were some 600,000; in the military another 600,000. In reporting these statistics, Des Holbrook of NHSC comments that the federal government is by far the largest supplier of correspondence instruction in the United States, with half the country's correspondence students being in such organizations as the armed forces, U.S. Office of Personnel Management, and Department of Agriculture.(4) What is not clear from his report is the status of distance education provided by business and industry. I have myself acted as consultant to one of Canada's big banking corporations and I'm sure there are other corporations which are investigating the possibilities, and investing in personnel and hardware to shift some of their training activities from face-to-face methods to a distance education approach. I am awaiting an article on this subject from the training manager of Britain's largest corporation, Imperial Chemical Industries, and hope to learn more about

American experience in this area during this conference.

When I look outside North America, probably the most impressive performance of privately funded distance education is seen in Scandinavia, and especially in Norway. Norway has no distance teaching university, but it has some 38 private schools teaching 1600 courses to 200,000 students, probably a higher proportion of its population studying by correspondence than any other country in the world as the total population of the country is only 4 million. What is interesting in Norway is that the private correspondence schools are so well integrated into the total educational system of the country. The government gives subsidies to the private schools for particular programmes and by manipulating this system of subsidies it gets the private sector, that is the correspondence schools, to achieve its educational and social objectives. I would like to give two examples of Norwegian programmes which will have to suffice to represent the private sector in what has been a generally university perspective until now. In the arctic region of Norway, also Sweden and Finland, live the people who used to be known as the Lapps and who now are called the Saami. Between the world wars the Norwegians attempted to assimilate the Saami into Norwegian culture. Today there is a policy of helping the Saamis to develop their own language and culture and obviously distance education has great potential in this as in any educational programme in the Arctic North. The Saami project has required collaboration between education authorities in Sweden and Finland as well as Norway. For its part, Norway's Ministry of Education contracted two private correspondence schools to participate in the project. The broadcasting authorities in all three

countries were brought in and the overall planning and conduct of the project is controlled by these five institutions. The courses that are now appearing throughout the Arctic consist of fifty lessons in four books accompanied by 75 radio programmes. Audio cassettes are available for group use and correspondence units accompany each book of lessons. The whole project shows the possibility for using distance education techniques in the education and development of a total community. Indeed the Saamis would say 'for national survival'.(5)

The second example is in the Norwegian pulp and paper industry, one of the country's main employers, where distance education is used in technician training. A group of trainees is organised in each workplace under the supervision of a local coordinator. Supervisors are given a common briefing and then oversee a training programme lasting from Fall until Spring. Trainees receive correspondence materials in two week intervals and participate in group meetings in their local workplace. The supervisor is supplied with teaching devices, particularly video cassettes. Each week the trainees are set a problem which requires them to apply the week's theory to the working problems in their particular workplace. One of the Norwegians communicated to me a sense of the excitement which comes from this linking of distance teaching and local application. He said, "when the trainees meet they discuss their mills' own way of technical solutions, equipment and routines based on the new theory. Often the members of the groups will find new and better solutions of the technical problems and carry them out during the course."(6) This area of technical vocational training and re-training is

where the most vigorous development are occurring in distance education at the present time in Europe, and in particular in Great Britain anyway. In Britain the success of the Open University in distance education has led the government to stimulate a similar approach to the problem of providing updating courses for adults in employment and retraining opportunities for the unemployed, particularly those who are unskilled. The policy which shows every sign of being successful has been to encourage a change in attitude to training both on the side of industry and also in the educational institutions themselves. What is called the Open Tech programme started just three years ago, has spawned literally hundreds of experiments in distance teaching with varying combinations of face-to-face instruction both in Colleges of Further Education and also in workplaces up and down the country. The Open Tech is not an institution but a programme which provides pump-priming funds to industry and to local colleges to enable them to develop materials and delivery systems to overcome particular barriers for particular groups of workers. One of several hundreds of examples is a project designed to help inn-keepers become more effective managers and better businessmen. It was said they were a group who were not very interested in training and were often of low academic ability and there are an awful lot of them in Britain.(7) My local College of Higher Education is developing a course for training people in the skills of export marketing. Students on the course receive learning materials down the telephone line direct to their own office computers and use information from the Post Office video text system in the course work. In most of these so-called open learning projects print and computer-based and

telecommunications materials are provided at a learning resource centre either in the college or in the company, and tutorial support and help in practical work is available at the college or at the workplace. In companies, the line manager may well take the responsibility for training, and learners can form self-help groups to support their learning experience.

At the British Open University the development of Continuing Education courses, which is what we call our non-degree courses, is without doubt, in my opinion, the most important development since the foundation of the University. Although it was founded in only 1983, the University's Management Education Programme, which goes under the title, The Open Business School is already, with some 5,000 students, one of the largest business schools in Europe. Courses range from a basic introduction to Management through Accounting and Finance, Personnel Selection and Interviewing, to a course on How to Start Up Your Own Business and International Marketing. Courses in Health and Social Welfare are also taken by about 5,000 people. Titles include, Caring for Older People, and a systematic approach to Nursing Care, Caring for Children and Young People, and Coronary Prevention. Professional Development in Education includes a university diploma in Reading Development and other school-focussed courses such as mathematics and technology for

teachers. An important project has been one to provide in-service education for teachers in the use of micro-computers. Probably the most active sector at the present time is the Scientific and Technological Updating programme which has received foundation and government funds for the production of such courses as Polymer Engineering, Software Engineering and Robotics in Manufacturing. A further five courses are planned for first appearance this year, six courses next year and another seven in 1987 in this engineering area alone. In addition there are courses in electronics, in agriculture and in chemistry. Community Education sets out, in their own words, "to meet the learning needs of individuals at various stages of their lives in their roles a parents, consumers, employees and citizens in the context of their family workplace and community."(8) With some 17,000 users, this is the largest of the Continuing Education sectors, and in many ways, the most interesting. Community Education courses include such titles as The First Years of Life, a course for parents and others involved in looking after very young children, Pregnancy and Birth, the Pre-School Child, Childhood 5-10, Parents and Teenagers, and at the other end of the age-range, a course, Caring for Older People and another Planning Retirement. Two courses aimed at understanding and dealing with current social problems include, Racism in the Workplace, and the Unemployment Project. This latter is supposed to help unemployed people to tackle the practical problems of being unemployed and to help them explore options for their future and draw up a plan for action for the future. These Community Education courses have many features of particular interest to students of distance education. No instruction is provided by the University

in the Community Education programme, either by correspondence or in face-to-face settings. All courses have been prepared in collaboration with other agencies, many of which have a network of local branches and local leaders who organise local groups to share the study of the Open University materials. The materials, however, may be studied by the individual entirely alone. The typical Community Education course consists of a study pack consisting of a book and an audio cassette and other resource material; in addition, video cassettes may be purchased, and if the user wants recognition from the University, an assessment pack may be purchased. Finally there are group materials for people who wish to enroll as a group. Thus in both content and in teaching methods, the Community Education courses are characterised by a high degree of flexibility. Early in 1984 the 100,000th Community Education student was recruited and during that year over 20,000 packs of material were sold and the influence of these materials goes even further than those figures suggest, because they have been adapted both formally and informally by professionals and para professionals in the various helping professions. For example, the Scottish Health Education Council funded an adaptation of First Years of Life and distributed it free to 325,000 pregnant women in Scotland. It is estimated that between 50 and 100,000 people watched or listened to the broadcasts on The First Years of Life alone. This same course and some of the other courses have been translated into Spanish and Portuguese for use in South America, and are used in Murdoch University in Australia and Everyman's in Israel. So clearly this Community Education programme is an adult education programme at a distance with very

considerable impact.

So far I have tried to give an impression of the scale and success of the renaissance of distance education internationally and also an indication of the range of programs which can be, and are, taught. In the time which remains I will make some comments on the broad aspects of distance education which we will be discussing during the next two days, first looking at Course Design. The general point to make about course design is that in distance education - called by some scholars - the industrial form of education, - courses are seldom designed and taught by the same persons. Good academics are not always good distance teachers, nor can all academics be expected to be good course designers. Therefore there is a division of labor between those who design, those who teach by correspondence, by broadcast and other media, and perhaps also those who teach in face-to-face instructional groups. How far this specialization should go varies among institutions, and is a subject of some debate. At the Open University in Britain each course is designed and produced by a team which might be as many as 20 or more people, and is seldom fewer than 10. Different academics take responsibility for their specialist content areas, decided by a team of technical specialists, writing correspondence study guides, writing or compiling readers, making films and tapes, designing texts, exercises, and various supplementary materials. The academics in the team share the services of such technical specialists as radio and TV producers, editors, educational technologists, and librarians. A senior academic chairs the team and an administrator is responsible for ensuring that each task in a 2 year schedule is completed on time . It is not

appropriate to describe the Open University's course team in any detail, but I will just make one or two comments. Firstly a great deal of time and energy goes into arguing the case for a particular course since resources are limited and each course is very expensive; costing in the region of $ 1/2 million - it is a major educational and political decision to give priority to a particular course. Thus it took us many years before we could obtain a course in the education of adults in the Open University. Having had a course approved, it then is over a two year full time process to design the course. We began with a series of exploratory meetings with experts and practitioners in the field, then we have to find consultants who will contribute written and other resources to the course and then over two years we hold regular meetings and each part of the printed course is written and re-written in three or on occasions four drafts. Each draft is commented upon by the course team and external readers. In our course we had 37 readers giving either oral or written comments on each draft. Then a round of eight meetings around the country with dozens of representatives of the field. Each of us in designing our course material had to identify general aims and specific objectives and calculate the time and length of student work. Decisions must be made on teaching strategy, for example what proportion of time to be spent on readings and on a project and on using the study guide. A series of radio and TV titles has to be decided and programmes produced to fit the print. Course readers have to be written or where secondary resources are used, copyright clearance obtained, Photographs obtained, cartoons commissioned from the design studio. Guidelines for our tutors must be prepared and notes to help

tutors in marking assignments. Questions about evaluation, particularly the examination and assessment strategies. Finally tutors have to be brought together to be given briefing and training before eventually in February of 1984 our first students began work. I have over simplified the picture of the Course Team in the Open University because I have over generalised the description of the course design process and in particular I have over generalised on the activities in each of the various sub processes. For example a great deal of detailed planning and very specific creative work goes into each television programme, each radio broadcast and so on. However, there is a tendency to exaggerate the difficulties in designing courses for Distance Education and I would not wish to do that either. It is not too difficult to produce courses which are high quality in both their content and their teaching method, given adequate and not necessarily very rich resources in manpower, print and audio visual material.

While several other institutions in other countries have copied this course team model, different models have evolved elsewhere. At Athabasca, for example, the Course Team has evolved into a small group of just one academic, one educational technologist, an editor, a visual designer, and a media consultant. This gives only one academic's perception of the content being taught and there is likely to be some loss of breadth and perhaps depth of analysis as a result, but of course it is a much less expensive system than the British, and perhaps is an approach which could be studied by institutions which consider improving their course design system without being able to

be involved in a large course team system. Probably the most common model of course design in American independent study is the author/editor model in which the course is written solely by an academic and presented to the editorial staff of the Department of Independent Study to ensure it is presented in a form suitable for external study. The Australian educator, Kevin Smith, has criticised American Independent Study courses for being stereotyped, consisting invariably of a study guide written round a textbook, being very limited in actual teaching content, and being devoid of sufficient broadcast or recorded content and face-to-face contact.(9) I refer to this critique only as a way of underlining one very important item on the agenda for our conference - can we improve our approach to course design, and if so, how?

Turning from the question of how we design courses to the design itself, traditionally the key concepts are that distance education materials should be (a) well structured (b) self sufficient, and (c) have "personality."(10) Good structure is both internal and external to the written material. Externally this means that what contributes to the course through non-print or supplementary material is conceived and prepared as an integral part of the course, not added on after the written course has been completed. Certain kinds of content and instruction are better delivered by each medium, so this must be considered from the very beginning of the course design process. John Spakes at the Open University has written several articles examining the question of which medium to use for which message,(11) but there has been little systematic research to test our beliefs about exactly which medium

carries various types of educational messages most effectively. So there are vast opportunities for educational research in this area. Internal structure refers to the relationships of the various parts of the printed teaching package - between the form of expression of general aims and specific objectives, self-tests, assignment questions and examinations; it includes a reasonable conformity among authors regarding such matters as terminology, and teaching style. Personal idiosyncracies are permissible and to be encouraged, but the general style of the material has to be such that the student develops a sense of overall purpose and consistency - a wholeness in a work which is in fact the sum of many parts and many contributors.

A second key word is "self-sufficient." This applies to the overwhelming majority of distance education courses. A minority of courses are prepared for use in face-to-face situations, but in the majority of courses, and distance education in principle, face-to-face instruction is always ancillary to the prepared package, and participation in face-to-face instruction may not be assumed. Many students are not able to or do not want to participate in face-to-face instruction, and courses therefore must be designed to be self-sufficient. Thus every teaching point must be considered very carefully to ensure it is fully explained, without ambiguity, without inaccuracy, "non-sequiters, gaps or other defects in the argument" (Lewis).

Thirdly the material must have personality. It is easy to be both clear and dull. Every effort must be made to convey to the student the sense of excitement, explanation, discovery and satisfaction which presumably motivates

the academics who write the course. Many academics are not able to write in a way that is both intelligible and exciting- and to make their materials exciting is an important challenge for the educational technologist and editors. It is in this area that the audio and visual media are especially valuable, but it is very wrong to think of these media as always stimulating and motivating, or to think that a dull text can be saved by use of the other media. Correspondence texts are often dull and uninspiring, but they need not be if enough creative work is put into them. Finally I would add a fourth key concept to these more established ideas about course design. This is the idea of learner-contribution. The typical distance education package is so highly structured that it gives the student little autonomy. The students may choose from a range of courses, but then must follow a precise sequence of course materials, may omit very little and bring in very little of their own experiences. In the Open University the course team determines the assignment to be written by the student and gives the tutor a guide as to what the student should write. So while the objective of maintaining high academic standards is achieved by standardisation and quality-control techniques, students can acquire an idea of knowledge as passive and unproblematic, bought in a package like a commodity. New efforts are being made to structure the distance education course to provide enough space for students to explore outside the course and to use their own experience. In the course I have referred to as an example we replaced the written assignment with a learner designed project, negotiated at a distance, in which the students were able to apply and test principles explained in the course in their own home or work

settings.(12) This trend to incorporate project work, discovery learning, even peer-teaching at a distance - in short to greater learner independence - is one of the most important developments in distance education at the present time - and for the remainder of the 1980's. When we turn to look at the nature of learners in distance education we find that in some respects a great deal is known. The big distance teaching institutions provide comprehensive information about such vital statistics as the sex of their students (in Germany it's 25% female, in Canada 60%); their ages (1 in 3 U.K. students is over age 44); and their employment status (the overwhelming majority in all countries being in some form of employment). Some statistics of particular interest in all kinds of adult education are those concerning drop-outs; a subject which has featured significantly in the research literature of correspondence education for more than half a century. A comprehensive review of the subject was carried in "Teaching At A Distance" in 1983, including 22 tables of data, mostly about the Open University, but with information gathered from other universities also.(13) The success rate of students who persist in their studies is very high - 96%. Not everybody persists though. About 24% drop-out. A completion rate of nearly 75% however is very high by comparison with other forms of distance education, and perhaps compared with any other form of voluntary, adult learning. (Bear in mind that by completion I am referring to completing 1/6 of the degree, and the total undergraduate body in the Open University is some 80,000. So the number of people studying successfully in this distance teaching organization is very large. We have studied such demographic variables of drop-outs as age, sex, occupation and

geographic location, and even correlated drop-outs and such course-related features as the number of set books and the times of radio and television programs. We have identified the high risk characteristics of both students and courses, which go some way toward helping us modify both the course production system and the student support system so as to reduce the pressures leading to drop-out. One particularly interesting discovery has been related to age. It is the very young and the very old who are most likely to drop-out. The very young those from 20 to 25. The old being from 65 and over. The most successful age overall was the group between 30 and 39 but of those who stayed in the University for more than one year, the most successful were those aged between 60 and 64. We have about three thousand students aged 60 or over in the Open University and there is considerable data about their achievement and their attitudes to distance learning. The same can be said for several other sub-groups of learners such as the disabled, including hearing impaired and the visually handicapped and also psychologically stressed student, and students who were particularly educationally disadvantaged on entering the university. When students are asked to report their study difficulties, planning and scheduling problems appear high on their list. The problems most often raised by students in interviews as distinct from survey are family commitments, career motivation and anxiety about learning.

Very high on this list of problems faced by distance students is the tension between the demands of their study and the commitment they feel towards families and friends. This tension limits the amount of time given

to study and also the position that study takes in the student's life. Not all students enjoy the support of their families, friends and work mates, and taking the most pessimistic view as many as 1 in 4 students may be regarded as potential under achievers because of the nature of their families' reaction to their decision to study. When we turn to career motivation a significant number of students, some 45%, consider career development either through promotion in their existing employment or through career change as one of the more important reasons for studying. There is cause for some anxiety here because many students over-estimate the significance of a degree and there is no guarantee that completion of the degree will itself lead either to a new job or to promotion. A third student problem area frequently mentioned by students themselves is anxiety about their ability and performance as students. After a study of over 1000 students, about 23% had a high, that is over 1 standard deviation, anxiety score. Subsequent analysis showed that there was only a slight relationship between the anxiety scores and academic performance.(14) The conclusion to be drawn from this must be that distant students need counselling help to overcome anxieties which are irrelevant to their successful completion of a learning program. The problem of how to establish adequate counselling services for distant students is something I would recommend as worth giving some special attention to during the course of this conference.

Another learner variable which has received some attention is learning style and the associated conduct of cognitive style. Part of my own research here in Wisconsin focussed on cognitive style of field dependence-

independence, a subject taken up recently by Thompson, and currently of interest to Sylvia Rose, and Glen Hoyle to mention two local scholars whose work I know.(15)(16)

At the Open University there has been considerable work on a learning style called syllabus-bound/syllabus free. Syllabus bound students are those who liked learning goals set for them, read only what they consider to be essential and typically have a specific purpose in mind in their study. Syllabus free students are more likely to pursue learning for its own sake, choose their own study materials by their own criteria, and are more self directing generally in making educational descisions. It appears that the syllabus free student is more likely to drop out of our Open University type of distance education, but eventually the syllabus free are more likely to succeed than the highly syllabus bound. All kinds of implications and connections with the theory of independent learning and its relationship to distance education are suggested by this research, and it is an area which I would feel well worth pursuing further.

Two commonly asked questions about student learning are: What factors will predict achievement, and what factors motivate the learner? When we constructed a prediction model on the basis of 19 variables, including age, socio-economic status, years of schooling, intrinsic motivation, need for achievement, sex personality variables and the syllabus bound/syllabus free learning style, the total variance of academic performance explained was 45%. No less than 55% is still unaccounted for.(18) We can only speculate what part of this unexplained variance is due to error in measurement, and what may

be due to accidental factors to do with the teaching system such as variations in tutor ability, quality of local study facilities, etc. All I can say is that we still cannot predict academic performance with any confidence, and the research opportunities in this area are considerable.

As for motivation in the everyday, not the psychologist's use of the term, it is noteworthy that no fewer than four Open University studies indicate a three-fold division in students' explanations of why they undertake distance education. It is somewhat surprising that while 1/3 learn to improve their career prospects, another 1/3 learn because they aspire to academic qualifications for personal satisfaction, and another 1/3 are motivated primarily by a simple wish to widen their knowledge.(19) Again, I can only conclude that more investigation in this area is needed.

I would now like to move from consideration of the student to make a few points about the interface between the student and the distance teaching system itself.

In all the major multi-media distance education systems, correspondence instruction is the central teaching method. The only exception among the biggest 12 such institutions are the Radio-TV universities in China where distance instruction is by television and viewing is in groups in the presence of a local tutor. In Japan, coincidentally I imagine the approach is similar; students receive instruction by television (but not through group viewing) and attend compulsory face to face tutorials based on the TV programs. With these exceptions the big institutions rely heavily on written correspondence between student and a distant tutor. The student is expected to send to the tutor a

substantial written assignment at frequent intervals and the tutor's job is to offer criticism and advice, with reference to the various texts, broadcasts and other materials which make up the total course. The tutor obviously has to be thoroughly knowledgeable about all aspects of the package but as an academic must be also both critical and independent of it. So specific references to particular passages in the text are a valuable and economical way of expanding advice to the student, but, at the same time, the student must be helped to develop a critical view on the course material. It is particularly challenging for the distant tutor to engage with the student in dialogue, controversy, and even disagreement. Much tutorial discussion at university level inevitably involves taking issue with a student's opinions. In tutoring at a distance comments need to be very carefully phrased and considerate, the opportunity for added explanation not being available as in a face to face setting. It is essential to do everything to prevent demoralisation and tutors must make every effort to avoid anything like an abrupt or curt style. The correspondence tutor has to learn to raise the issues with a distant and largely unknown student on paper, but at the same time to communicate an air of co-operation and friendliness, that is usually shown in a live tutorial by non-verbal gestures. A correspondence tutor therefore has to acquire the knack of friendly verbal gestures.(20)

When we turn from correspondence tutoring to teaching through the broadcast and other audio visual media, we enter what is probably the most complex and confused and fast changing area of distance education. Among the more common media now available and used, apart from print, are television and

radio broadcasting, cable tv, satellite tv, audio cassettes, video cassettes, telephone teaching, computers, micro computers, view data and teletex and video discs, to mention only the more common. Each of these has been developed as the primary or sole media of distance teaching, while all or most are used in the major multi-media programmes.(21) A colleague, Tony Bates, has made a special study of the use of audio visual media in distance education systems and identifies three trends which I would agree with.(22) He says firstly that the range of audio visual media suitable for distance education is rapidly increasing, secondly there is a clear movement away from using broadcasting and thirdly that the educational potential of audio visual media is still under-exploited. One of the major technological developments of the 1980's has been the lowering cost of video cassettes, audio cassettes and video discs. At the Open University we broadcast 35 hours a week of television and 24 hours a week of radio. But there is a clear move away from such general broadcasting towards the use of video and audio tapes. More than a thousand television programmes are now available on tape for student borrowing, and students certainly find it better to view in this medium, partly because they have such better control. Tapes can be stopped, rewound and replayed; can be studied more intensely and can be linked to other activities such as discussion groups. Bates asks why it is that broadcast television and radio services, with their glamour and appeal and their ability to reach mass audiences, appear to play so small a role in distance learning systems. Being himself an enthusiast for broadcasting, he blames teachers and educators as being unable to see the educational advantages of television

and radio. From my experience, as an educator, I put some considerable blame on broadcasters who are not willing to give up their aesthetic standards of broadcasting to produce what is perhaps not good exciting and attractive television or radio in the interest of facilitating actual student learning. On tape, for example, interviews can be extended beyond what would be tolerated by a radio producer. There can be repetition and re-statement which the broadcaster world regard as redundant. So the drift from general broadcasting to audio and video tapes is, I think, partly justified on good educational grounds. At the Open University the most important media development since its inception, has not been computer system learning, video discs or satellite tv, but the humble audio cassette. In 1978 virtually no courses used audio cassettes. By 1983, the Open University was sending half a million 60 minute cassettes to students. It has been found that audio cassettes, when integrated with correspondence texts, cover a wide range of teaching functions, but two in particular. Firstly, they are valuable in talking students through a range of other materials, such as statistical tables or maps or rock samples or even analysis of a television programme. The second role has been to bring raw material to the students for them to analyse consider and interpret, such as a conversation, or classroom interactions, or music. Audio cassettes are rarely used as straight lectures and they are not produced for continuous listening. Students are actively engaged in reading and stopping the tape to do activities. Broadcast television or radio is still the easiest way of reaching potential learners, and is important in both recruiting new learners and in giving motivation.

They are important in educational campaigns such as are common in adult basic education in developing countries, but are increasingly difficult to justify for direct teaching in developed countries unless the target audience is very large. Where radio and television are most successfully used as the primary media for instruction, they are always used in conjunction with some other medium which provides the learner with a means of responding, and gives also a source of explanation. Most often this consists of face to face groups with a local group leader as in the famous radiophonic schools now common throughout South America, or the equally famous Canadian forums, from which the radiophonic schools derived their inspiration. In the developed world however I feel the day is past when people would assemble in small groups to discuss a program broadcast by radio, and the individual audio-tape has taken the place of the radio. Some things are still communicated better in vision than any other way. I refer to such things as film of foreign countries or access to world leaders, or ingenious and expensive graphics. With the wide availability of television channels by cable there might be a continued use of television in distance education, though I believe myself it will continue to be replaced by video-tape, video-disc and other forms of communication based on the personal micro-computer. In the use of the telephone in education, the University of Wisconsin is the undoubted leader, and there is nothing to compare with its ETN system outside North America. In many countries the telephone system is not sufficiently widespread or reliable to be a useful educational medium, and even where there is good national coverage as in Great Britain line quality is often a problem. It is also certain that special

teaching skills and special student skills also are needed for teleconferencing, and for reasons which are hard to explain there remains resistance to this. The medium is developing however with the introduction in Britain of conference bridging equipment and the renting of dedicated lines on the Wisconsin pattern. Nowhere outside Wisconsin however can be found the combination of comparatively sophisticated technical equipment and a body of experienced educators experienced in the use of telephone in teaching, and we will continue to look to Wisconsin for leadership in this area.

The most recent hardware to catch the imagination of distance educators is the home computer, and experimental courses are now being designed to use the home computer together with a word processing package so that a student can prepare an assignment or messages and questions for the tutor and communicate this information down the telephone line for storage on the distance teaching institution's mainframe computer. From there the tutor can call up the assignment on his/her own home micro computer, mark it, and add comments and enter grades against the student's file. It will be possible for students to access each other's assignments and comments, and also comment back to the tutor or communicate with each other. Conversations via the keyboard can take place and messages left by students or tutors can be collected when convenient. The Open Learning Institute in Canada is already using such a system for communication between central staff and local tutors and is considering using it for a creative writing course, and in the Open University we are designing such a system for part of the diploma in adult education courses on which I am currently working.

There are several reasons for using the newer media in distance education. Firstly to deliver materials more effectively to students, and secondly, to provide variety in learning materials. There is considerable evidence that students vary in their learning styles and preferred media, so that the more approaches there are the better the chance of students understanding, and reaching deeper levels of understanding. Thirdly, some of the newer media are stronger instructionally because they give learners more control over the learning materials and so make it possible for them to be more active, and they also provide better forms of feedback, so make learning more individualised. Fourthly, some of the newer media are more cost effective than the previous media, and finally some of the newer media are getting very easy to use, so that the distance teaching materials are less difficult and time consuming to design. These are the criteria which should be applied when deciding whether to use a particular medium. There is no super medium; each serves different functions. The media vary in their suitability for dealing with the subtle interactions of different content and different learning skills and different teaching approaches and perhaps different learning personalities. The consequence therefore is not to select one or two super media but to use a range of media in a planned and integrated manner, so that a variety of educational functions and approaches can be offered. Most decisions in this area have been made for political reasons or in blind response to the availability of funding or following an individual's or institution's particular enthusiasm, but considering the large sums of money involved and the educational consequences of the decisions that have to

be made there has been a lamentable indeed shocking lack of research in this area, especially experimental research, which is surely the only way we will know which medium really is best suited for particular educational purposes.

Whichever media are used, it is necessary to consider the issues of student support. It is perfectly possible of course to leave the whole of the responsibility for study with the student, to offer students facilities but make no attempt to ensure that they use the facilities. This is an approach not unknown among distance educators and it cn be argued it reflects the recognition of the student's independence. Most distance teaching institutions however make various efforts to support their students, perhaps only by letters of encouragement and the occasional telephone conversation, or even by arranging face to face counselling sessions. In the first year of studying with the Open University, the student is allocated a tutor counsellora who tutors in the first year but acts as a counsellor, not only in the first year but throughout the student's university career. Tutor counsellors are appointed on a geographic basis and hold counselling sessions at one of the 260 study centres throughout the country. Since each tutor counsellor has no more than about 20 students in each year and provides face to face tutorials on a weekly basis, at the local Study Centre, it is reasonable to expect the tutor counsellor to develop a good understanding of each student and, if the student allows, to develop quite a close personal relationship. These tutor counsellors are expected to give help over a wide range of academic affairs, including the decision of what course to take in a particular year, whether to withdraw or not from a course, help with

examination techniques, help with study skills, advice on such personal academic related matters as financial and even family stresses. A second critically important role for the tutor counsellor is to act as an intermediary on behalf of the student with the University's complicated administrative structure. At Athabasca University which has a much smaller student population, dispersed over a wide geographic area, student support is provided by what is called the Student Development Services, which provide information and advice generally through printed publications. Learning centres have been provided in local schools or libraries to provide a range of supplementary learning materials. In Germany at the Fernuniversitat, the role of student support services is played down. there are Study Centres where counsellors called mentors provide tutorials and are available to advise students, but the mentors have none of the authority of the Open University tutor-counsellor. They have no part in the teaching of the course and are not made aware of the progress of students, so in practice only a small number of students seek help from them.

The drop-out rate at the Fernuniversitat is much higher than in the Open University, which substantiates a view held widely in the Open University that its success is probably owed as much to its student counselling system as to any other single factor. So I would recommend that the question of how to provide student support is kept in mind in any discussion about the interface between the learner and the distance teaching system.

Our survey should finish with one or two suggestions about the effectiveness and success of distance education as practised today.(23)

Although it is very difficult to quantify with any exactness the very large numbers of people who have been brought into formal learning, through distance education around the world must be counted in many millions and increases with the passing of every year; there can be few if any educational inventions which have had as wide n impact in widening access to education. Thus in 1981 the CCTU had 417 thousand students, the UK OU has nearly 86 thousand and the FEU over 36 thousand. Of course many distance teaching institutions are much smaller, but it is clear that many of their students could not study by any other means. So we can conclude that in both large institutions and small in two slightly different senses of the word, access to educational opportunity has been opened up. Because distance learning more than study in conventional institutions can be pursued alongside a wage earning occupation, several important effects on access follow. There is for example, considerably less economic pressure on the student to complete a course in the minimum time. People of comparatively low educational background and people whose study skills are comparatively undeveloped may achieve satisfactory academic standards under the conditions of distance education which they might not achieve in conventional education. This description tends to apply more to the blue collar than the white collar worker and therefore it is believed that distance education has been particularly beneficial in widening access for the blue collar worker. In the UK Open University by the end of 1978 over 60% of those people who were sufficiently qualified to enter a conventional university had obtained an Open University degree. Of those who were unqualified to undertake university study however, 40% had also achieved a

degree by 1978. So the success of the unqualified students, it is claimed, is a real achievement in equalising educational opportunities. It is of course dangerous to put too much weight on statistics of graduation because great numbers of distance teaching programmes do not lead to qualifications nor do all students want qualifications, and success needs to be judged in the light of student's aims and achievements. For many adult students in distance education, the primary purpose is greater personal fulfillment and increased knowledge, improved powers of reasoning and expression, and improved self confidence. Perhaps, as with so many adult education programmes, the best indicator of success is recurrent student demand and in this regard in the large and successful institutions, there is no sign of lessening student satisfaction. Another important indicator of the success of distance education, is the status of the learning which is achieved. Indicators of the status of distance learning can include the extent to which other educational institutions recognise distance studies, the recognition of awards given by employers and the esteem generally afforded to distance education in the community at large. All of this will vary from country to country of course. The UK Open University degree is now accepted as equal to other degrees by institutions recruiting in master's students and teaching for professional diploma certificates. As long ago as 1979 half of a sample group of employers regarded the OU degree as equivalent to one from other universities. About 20% said it was not as good but their reasons for saying so include "older universities are better because they are older and have longer traditions of excellence, 31% said the degree is modular and "not the outcome of a period of

concentrated study." So, we might feel their objections were based on prejudice, rather than on solid educational grounds. Certainly there are signs that distance education is now more accepted by the wider community. The mushrooming of programmes of distance education within conventional educational institutions and the frequency with which new large national institutions are established, is in itself evidence of this acceptance. Even as we speak, one of the world's great industrial countries and in some ways, educationally the most conservative, that is France, has announced its intention to establish a national Open University. Within countries, the presence of distance educators on government advisory bodies and the use of distance education materials by the general public and in conventional universities,and the attraction of substantial research grants, all show an integration of distance education into the political and educational life of the country. It does of course vary from country to country but it is certainly true to say now that in my own country, the Open University has now become n established national institution. When as part of its reduction of public expenditure, the present government turned its eye to the Open University it was met with a storm of protest, led by several members of the cabinet and supported by a petition signed by over a 100 members of parliament or some 1/5 of the country's legislators. Thiswas a political lobby that even Oxford and Cambridge would find it difficult to equal.

I would like to conclude this introduction to our conference by reminding you of a conference that took place here exactly 21 years ago.(24) It was a conference of the Articulated Instructional Media Programme and brought

together for two days leading persons in media, adult education, extension, higher education and industry. Altogether 150 participants representing 17 American states and one other country, Britain. The conference was the first in the United States and probably the first in the world to combine the thinking of educators, engineers, anthropologists, psychologists and media specialists in a multi disciplinary approach to the theory and nature of independent learning. Articulation referred to the idea of linking together various media in order to capitalise on the educational advantages of each one. A report on the project stated, "we can identify the chief advantages and strengths of all the varied methods, formats, programs and the media which provide extension or out-reach opportunity. By rejecting the idea of teaching only within a single discreet method, we can create a sequence of articulated learning experiences that will give each student more intelligent choices and chances and will carry him further towards his goals. Our articulated approach to learning enables us to use each method, medium or format for that type of learning activity in which it offers superior results." The Director of the Aim Project, Professor Charles Wedemeyer wrote in an article in Teaching at a Distance 1983 quite correctly that in the articulated instructional medium programme was first sketched out the educational geography of Distance Education, as we know it today.(25) The Open University borrowed very heavily from the ideas and experiments of the Aim Project and many of those ideas and experiments found their way into distance education elsewhere as other countries borrowed from the Open University. Nowhere should the ground be more fertile for the growth of distance education than in

Wisconsin itself. As a visitor, I look to Wisconsin with hope for yet more innovation in method and in the development of new concepts and also the further working out of ideas which were first expressed here over twenty years ago, and yet have still not received the full attention that they deserve. ABove all I look to this great International University, with its unequalled history of extension education to become a centre for the study and teaching of distance education and to be a centre of academic research in this field. I hope the conference which lies ahead of us might have at least some of the importance of the Aim conference of 21 years ago and will perhaps help restore the University of Wisconsin to the preeminent position in distance education which is rightfully yours.

1. Mackenzie, O. and Christensen, E. The Changing World of Correspondence Study. Pennsylvania State University Press, 1971.

2. Rumble G. and Harry, K. (Eds) The Distance Teaching Universities. St. Martin's Press, New York, 1982.

3. Raggat, P. and Harry, K. Trends in Distance Higher Education. Milton Keynes. Open University Distance Education Research Group Papers. Number 10a., 1984.

4. Holbrook, D. International Council for Correspondence Education. Learning at a Distance: A World Perspective. Edmonton Athabasca University, 1982.

5. Holtermann, K. A Multimedia Project in the Saami Languare. Paper presented to the European Home Study Council Workshop. Oslo, Norway, November 1984.

6. Medalen, L. Jobs and Education - The Role of Distance Education. - Paper presented to the European Home Study Council Workshop, Oslo, Norway, November 1984.

7. Coffey, J. Jobs and Education - The Role of Distance Education - Paper presented to the European Home Study Council Workshop, Oslo, Norway, November 1984.

8. Calder, J. The Open University Community Education Programme, in Tight, M. (ed) Opportunities for Adult Education. Croom Helm 1983.

9. Smith, K. Course Development Procedures. Distance Education 1.1., 1980 p.61.

10. Lewis, B. N. Course production at the Open University 1: Some Basic Problems. Br. J. Ed. Technology Vol. 2 No. 1 1971, pp. 4 - 15.

11. Sparkes, J. J. On choosing Teaching Methods to Match Educational Aims. in Distance Education International Perspectives. Sewart, D. Keegan D., and Holmberg, B. Ed. Croom-Helm. 1983.

12. Moore, M. G. 1983. Self-Directed Learning and Distance Education. ZIFF Papiere 48. Hagen: Fernuniversitat 1983

13. Woodley, A. and Parlett, M. Student Drop-Out. Teaching At A Distance No.24. Open University Press, 1983.

14. Murgatroyd, S. Student Learning Difficulties and the Role of Regional Support Services. Teaching At A Distance Institutional Research Review No 1. The Open University, Spring 1982.

15. Moore, M. G. Investigation of the interaction between the cognitive style of field independence and attitudes to independent study among adult learners who use correspondence independent study and self directed independent study. Diss. University of Wisconsin, Madison (Diss. Abstracts 37, p 3344 - A) 1976.

16. Thompson, G. The Cognitive style of field independence as an explanatory construct of distance education drop-out. Distance Education 5.2, 1984.

17. Gibbs, A., Morgan, A., Taylor, E. Why Students don't Learn. Teaching At A Distance Institutional Research Review. No. 1 1982.

18. Murgatroyd, S., Student learning difficulties and the role of regional support services.

19. Taylor, E. Morgan, A., Gibbs,G. The orientation of O.U. Foundation students to their studies. Teaching At A Distance No 20, 1981.

20. Lewis, B. N. Course production at the Open University.

21. Bates, A. (ed.) The Role of Technology in Distance Education. St. Martin's Press. New York, 1984.

22. Bates, A. Trends in the use of audio-visual media in distance education systems, in Sewart, Keegan and Holmberg., Distance Education, International Perspectives.

23. Rumble and Harry, The distance teaching Universities.

24. WedemeyerC. and Najem, R. Aim: from concept to reality. Syracuse, N.Y., Syracuse University Press Publications in Continuing Education, 1969.

25. Wedemeyer, C. A. The birth of the Open University - a postcript. Teaching At A Distance 23, Spring 1983.

HEURISTICS OF INSTRUCTIONAL DESIGN FOR DISTANCE EDUCATION

Dr. Terry L. Gibson
Department of Continuing and Vocational Education
University of Wisconsin-Madison
University of Wisconsin-Extension

August 5, 1985

The current research and related literature on instructional design contains many references to the algorithmic procedures of instructional design. An algorithmic procedure is one which if followed correctly in the appropriate circumstances will lead to the correct outcome. As a faculty member who has labored in the field of distance education, I am reluctant to identify any algorithms that will produce guaranteed results in distance education. As a consequence, I have chosen to label my presentation "Heuristics of Instructional Design for Distance Education." A heuristic procedure is one which is based on general rules rather than precise rules. Using a heuristic strategy improves ones chances of achieving the desired outcome, but does not guarantee a correct solution.

The heuristics that follow are based on my examination of the distance education research literature and my practical experience as a distance education teacher and student and my experience as a member of an instructional design team that has had responsibility for course development. I have had a few successes and a number of failures in my attempts to provide a quality learning experience for distant learners. I have probably learned as much from my failures as my successes. Unfortunately, I am not alone in my failures. Distance education programs, particularly those that are technology based, have in many cases not proven to be the panacea to all the problems of education. We have much to learn from the examination of programs like the University of Mid-America at Nebraska, the Articulated Instructional Media Program at Wisconsin, and many others I could mention. I am also old enough to remember the great fan fare that greeted the MPATI program in Indiana. MPATI or the Midwest Program on Airborne Televised Instruction provided televised instruction broadcast from an airplane to students and teachers in a six state area. The MPATI distance education system was frequently grounded by bad weather and it continually fought the turbulence of local teacher acceptance and ownership of the system. Twenty-four years after the MPATI experience we continue to see many parallel problems with contemporary distance learning systems. Our contemporary systems are rarely grounded by bad weather; however, we still have much to learn about overcoming the turbulence of acceptance by institutions, faculty, and students.

Heuristics of instructional design must obviously be placed within a context that carefully defines the definitional parameters. Let me begin by providing a rather broad working definition of distance education:

> Distance education is teaching/learning that is accomplished given a physical separateness of teachers and learners. Communication/interaction between teacher and learner is conducted primarily through print, electronic or mechanical means and secondarily through personal interaction with a tutor.

The locus or control over the instructional process should also be specified. For purposes of our current discussion, I would like to assume that a continuum exists with "learner control" at one end of the continuum and "institutional control" at the other end of the continuum. The ends of the continuum could also be labeled "self-directed learning" and "assembly line instruction." I personally have great problems with the industrial mass production metaphor; however, I think it serves to illustrate the extreme case of institutional control. Research on learning clearly indicates that higher order learning must be unique and personal and thus total institutional control is undesirable and probably impossible.

For purposes of our discussion, I would like to focus my observations on distance education systems that use pre-packaged instruction that includes:

- a statement of objectives,
- an instructional text,
- a study guide,
- self-assessment and instructor assessment procedures,
- a video/audio based component, and
- personal interaction with a tutor/instructor via correspondence, computer mail, telephone, or personal visits.

It should also be assumed that the distance learning program/course is part of a curriculum that leads to a degree or some form of credentialing that requires institutional review. Because the instruction is pre-packaged and the institution is accountable for verifying the learning outcomes, the locus of control over the instructional activities will be at the "institutional" rather than the "learner" end of the continuum.

Implementation of many of the heuristics may be dependent on a critical mass of human and financial resources and a sufficient number of students to amortize the costs of the program across the life of the course.

The heuristics that follow are based on my examination of the distance education literature and my personal experiences as a distance education teacher and student. The heuristics are in many cases common sense applications that are theoretically based but have not been verified through substantial research. The limited research that has been done has often produced contradictory results. Many of the studies have been done using a very small sample and a limited treatment period that probably provides insufficient time for the learner to understand the technique being examined. I invite you to draw your own conclusions through a careful examination of the research studies.

I would like to call your attention to a promising body of research on learning control of instruction that is being conducted by M. David Merrill and his colleagues at the University of Southern California. Merrill defines learner control as "the ability of the student to select and use a variety of internal processing strategies as he/she interacts with the presentations that comprise the instruction." Much of Merrill's work has been done with computer assisted instruction; however, the applications could be generalized to a number of methods of distance education.

As a practitioner in the field of distance learning, I am unwilling to reject a solid theoretical rationale if the scientific evidence is inconclusive. The heuristics that follow are thus provided in the hope that they will advance the practice of distance education and promote additional research.

Heuristic #1: Distance education students will probably need to "learn how to learn" from a distance learning system.

Distance education systems require a different combination of learning skills than traditional classroom instruction. Students need help identifying the needed skills and developing those skills if they are not available. Information on learning how to learn should be included in the introductory materials for the course. It could also be argued that students should have such knowledge prior to their official enrollment in the course.

Heuristic #2: Information on "learning how to learn" via distance education should be included throughout the course.

Distance education students may be so anxious to get into the content of a course that they will skip over the introductory sections of a course. As a consequence, the course materials should provide frequent hints or techniques to help the learner. The tutor plays an obvious role in providing guidance to the learner on how to learn as well as the course content.

Heuristic #3: Distance education students need to feel that they are interacting with written materials and video/audio materials that have been prepared by authors who understand distance education students.

The materials need to have life and vitality that shows the student that the author accepts their life experiences as relevant and meaningful.

Heuristic #4: Distance education students need to feel that they are interacting with a tutor/instructor who understands their needs and frustrations.

Heuristic #5: Distance education students and tutors/instructors should be encouraged to share their backgrounds--the human and personal aspects of their lives that make them interesting and unique human beings.

Heuristic #6: Distance education students should be encouraged to sincerely share their motivations for taking a course.

The stated objectives of the course and the role of the course in a curriculum that leads to a credential/degree may not be the primary motivating factor in completing the course.

Heuristic #7: A synergism should exist between all the instructional materials in a distance learning program. The resulting product should be greater than the sum of the individual parts.

The video/audio, study guide, textbook, and other materials should all be integrated. The relationships should be structured and obvious to the learner. The role of each media should be identified and the learner should understand why he/she is being asked to view a television program that repeats the identical material covered in the textbook.

Heuristic #8: Dollars and time investment in the production of written and audio/video materials should be proportional to the instructional value of the materials.

As previously stated, the role of each media in support of the instructional process needs to be clearly delineated. Faculty time and talents should be appropriately devoted to that media or method that will carry the majority of the instructional load. The excitement of producing a creative media product should not overshadow the relative importance of the media element to the quality of the total course. Frequently distance education faculty get caught up in the thrill of doing television and fail to channel sufficient time and creative energy into the production of print materials.

Heuristic #9: The readability of the materials and the completion rate of the course have a positive correlation.

Klare and Smart found a rank-order correlation of .87 between the readability level of correspondence material and the probability that students would send in all the lessons (with length held constant).

Heuristic #10: Provide alternative presentations of material that are compatible with different learning styles. Cue or identify the presentations so that students can efficiently access the material. Higher order learning is rarely lineal. Students should be expected and encouraged to take a number of different routes to the final destination. The distance education materials should make it easy for students to identify alternative routes and routes that are compatible with their preferred learning style.

Students who have had success with a number of different teaching approaches will probably succeed in a course that uses only one teaching/learning style. Students who have had less success and who are less able to use a variety of learning styles may have great difficulty with a distance education course that does not match their preferred learning style.

Heuristic #11: Empower the student to adapt the materials to their unique learning style.

A good student will adapt the materials without your blessing and the poor student may do it only with your encouragement. If you empower the student, you give them control and greater ownership of the course and they avoid the guilt of tampering with the master plan.

Heuristic #12: The novelty effect is short lived.

The thrill of learning by a different method may be very brief. The approach needs to return obvious benefits to the learner and clearly support the learning objectives. Video or any other approach that is offered only as an entertaining, motivating or pacing device may quickly loose its impact.

Heuristic #13: Provide content and learning activities in digestible bits.

Don't give them so much that they have indigestion or get exhausted. Remember that distributed practice is more effective than massed practice in the retention of knowledge.

Heuristic #14: Distance education students should always have a successful learning experience with the first lesson in the course.

Heuristic #15: Keep lessons short and provide frequent reinforcement and benchmarks for self-assessment of process in the course.

Heuristic #16: Provide rewards to the student by making them feel good about their progress and that they can take a "rest" from their studies.

Let them know that they have accomplished quite a lot in the last section and that they may feel tired. Recommend that they reward themselves by taking some time off before they tackle the next section.

Heuristic #17: The materials should stress the practical "real world" applications of the concepts presented in the course.

Heuristic #18: Provide an appropriate mind set for the use of the learning materials.

Give the student specific guidance and directions on the use of mediated materials and what to listen/watch for. Students frequently have an entertainment mind set when they view a television program or listen to a radio program or audio tape. Many "educational" programs have high production values and are very entertaining. The casual television viewer or radio listener may be entertained and educated by such programs. However, the serious distance education student should bring a very different set of expectations to such an experience.

Heuristic #19: Let the student know the relative importance of the information in video/audio form. Is the information supplemental or critical to their understanding of a key concept?

Heuristic #20: Provide structured notes or an outline of the content covered in the audio/video materials.

Heuristic #21: Cross reference the various presentations of information. Provide a "master" index of all the materials.

Heuristic #22: Remember the loneliness of the long distance learner. Provide an opportunity for the learner to contact other current students or graduates of the course.

Former students may be willing to establish a mentor relationship with a student in their area. Current students should be encouraged to establish a learning network that will facilitate learning and provide additional psychological support to the isolated learner. However, remember that some distance learners may prefer to operate independently and they may not want to participate in a learning network.

Heuristic #23: If the course is self-paced, encourage the student to establish a realistic time schedule and then provide a friendly reminder if they are failing to meet their own schedule.

Heuristic #24: "Meanings are in people not in words." Take the time to carefully pilot-test and review your materials.

Heuristic #25: Make certain that the intentional and unintentional cues you have used to identify key concepts and knowledge to be learned are consistent with course examinations.

Heuristic #26: Provide a role for the tutor/instructor that permits ownership of the course and establishes a level of professional rapport with the student.

Heuristic #27: If a design team is established to produce a media based distance education course, make certain that the decision making process will support the academic integrity and instructional quality of the final product.

Decisions on course content, structure, and presentation style must be consistent with a set of instructional criteria that clearly articulates the objective and the role of each element of the distance education program. Aesthetics are important, however, aesthetics that have limited instructional value will frustrate students who want to learn rather than be entertained. A creative balance is required and the decision making process must keep the intended objectives clearly in focus.

I would like to conclude my list of heuristics by sharing some insights that I have gained from two learning theorists who appear to be at opposite ends of the continuum. Carl Rogers is frequently called a "humanist" and his work on facilitating learning and psychotherapy has earned him an international reputation. The other learning theorist is Robert Gagne. Gagne is a neobehaviorist and much of the instructional design research and literature is based on his approach to learning. Gagne assumes that the instructor is a manager of the conditions of learning and that if the correct conditions are presented, learning will take place. I have followed the work of Gagne for the past twenty years and as an adult educator I feel that his theoretical approach has utility in the design of pre-packaged instruction that requires faculty and the institutional decision making prior to the actual instructional events.

In recommending the work of Gagne I am also assuming that the student has made a conscious decision to select a particular course of learning and that he/she wants to use the most "efficient" method of learning the material. We could profitably spend a great amount of time discussing the word "efficiency"; however, in the interest of brevity permit me to use the word at this point in our discussion.

Heuristic #28: Use Gagne's "events of instruction" in structuring each learning unit of the course.

The heuristics I have identifed are not mutually exclusive and thus Gagne's "events of instruction" include some elements of prior heuristics. Gagne in the fourth edition of his book, The Conditions of Learning, identifies the following events of instruction:

1. Gaining attention
2. Informing the learner of the objectives
3. Stimulating recall of prerequisite learnings
4. Presenting the stimulus material
5. Providing "learning guidance"
6. Eliciting the performance
7. Providing feedback about performance correctness
8. Assessing the performance
9. Enhancing retention and transfer

Each of the preceding steps is important and distance education course developers should give careful attention to the inclusion of each event in the preparation of instructional units.

The work of Gagne will continue to provide an appropriate framework for the development of pre-packaged instruction; however, the work of Carl Rogers should be considered in assessing the long range learning outcomes. In his book, Freedom to Learn, Rogers identifies a number of principles of learning that I feel should be incorporated into a distance learning system.

Heuristic #29: Use Roger's "principles of learning" to humanize the pre-packaged instruction and facilitate tutor/learner interaction.

On the surface Roger's principles would appear to be difficult to use in a pre-packaged system. However, many of the principles can be implemented by using an appropriate writing style and by fully recognizing the rich resources the learner brings to the teaching/learning transaction. Rogers' principles of learning include:

1. Human beings have a natural potentiality for learning.
2. Significant learning takes place when the subject matter is perceived by the student as having relevance for his/her own purpose.
3. Learning which involves a change in self-organization--in the perception of oneself--is threatening and tends to be resisted.
4. Those learnings which are threatening to the self are more easily perceived and assimilated when external threats are at a minimum.
5. When threat to the self is low, experience can be perceived in differentiated fashion and learning can proceed.
6. Much significant learning is acquired through doing.
7. Learning is facilitated when the student participates responsibly in the learning process.

8. Self-initiated learning which involves the whole person of the learner--feelings as well as intellect--is the most lasting and pervasive.

9. Independence, creativity, and self-reliance are all facilitated when self-criticism and self-evaluation is basic and evaluation by others is of secondary importance.

10. The most socially useful learning in the modern world is the learning of the process of learning, a continuing openness to experience and incorporation into oneself of the process of change.

The human factors can not be ignored in the design of pre-packaged instruction. The style of presentation and the tutor play a critical role in facilitating the learning process. Students have a natural desire to learn and a good distance education program will help that student make the most of the learning opportunity.

Long term learning is enhanced when the student is able to relate the course content to their past experiences and present applications. Students may need help in making the connection and a distance education program should not assume that students will automatically grasp the relevance of the content being examined.

Students also need help in dealing with the contradictions between the course content and their life experiences and self-perceptions. The course materials should acknowledge potential contradictions and help the student fully explore the roots of the conflict. The typical delay in interaction between tutor and student necessitates special attention in this area.

The learner needs to feel that he/she is accepted and respected and that he/she has a meaningful and active role to play in the teaching/learning process.

The preceding heuristics are based on my review of the distance education and instructional design research and my own experiences. Much additional research needs to be done in this very important area. Billions of dollars are being spent by business, industry, the government, the military, and our educational institutions to produce distance learning programs. We have much to learn. However, we may not be applying all that we currently know about distance learning.

BIBLIOGRAPHY

Baath, John A. (1983). A list of ideas for the construction of distance education courses. In David Sewart, Desmond Keegan, and Borje Holmberg (Eds.), Distance education: International perspectives. London: Croom Helm and New York: St. Martin's Press.

Carter, John F. (1985). Considerations in the development of distance education texts. In David Jonassen (Ed.), The technology of text: Principles for structuring, designing, and display text: Volume II. Englewood Cliffs: Educational Technology Publications.

Gagne, Robert M. (1985). The conditions of learning and theory of instruction (4th ed.). New York: Holt, Rinehart, and Winston.

Hartley, J. (1978). Designing instructional texts. London: Kogan Page and New York: Nichols Publishing Company.

Holmberg, Borje (1981). Status and trends of distance education--A survey and bibliography. London: Kogan Page and New York: Nichols Publishing Company.

Jonassen, David (1985). Generative learning vs. mathemagenic control of text processing. In David Jonassen (Ed.), The technology of text: Principles for structuring, designing, and display text. Volume II. Englewood Cliffs: Educational Technology Publications.

Klare, G. R. and Smart, K. (1973). Analysis of the readability level of selected USAFI instructional materials. Journal of Educational Research, 67, 176.

Merrill, M. David (1983). Component display theory. In Charles Riegeluth (Ed.). Instructional design theories and models: An overview of their current status. Hillsdale, New Jersey: Lawrence Elbaun Associates, Publishers.

Merrill, M. David (1984). What is learner control? In Ronald K. Bass and Charles R. Dills (Eds.). Instructional development: The state of the art, II. Dubuque, Iowa: Kendall/Hunt Publishing.

Pace, Ann Jaffe (1985). Learning to learn through text design can it be done? In David Jonassen (Ed.). The technology of text: Principles for structuring, designing, and display text. Volume II. Englewood Cliffs: Educational Technology Publications.

Rogers, Carl R. (1969). Freedom to learn. Columbus, Ohio: Charles E. Merrill Publishing.

Thomas, Keith J.; Stahl, Robert J.; and Swanson, Charlene C. (1984). Developing textual materials: What research says to the practitioner. In Ronald K. Bass and Charles R. Dills (Eds.). Instructional development: The state of the art, II. Dubuque, Iowa: Kendall/Hunt Publishing.

Wedemeyer, Charles A. (1981). Learning at the back door--Reflections on non-traditional learning in the lifespan. Madison, Wisconsin: University of Wisconsin Press.

Wedemeyer, Charles and Najem, Robert E. (1969). AIM: From concept to reality--The articulated instructional media program at Wisconsin. Notes and Essays on Education for Adults #61. Syracuse University Publications in Continuing Education.

Administration of Distance Education Systems

Donald McNeil
Provost
American Open University

A good distance learning program requires additional dimensions to the standard requirements of on-campus operations. These special characteristics revolve around the standard ingredients of a good institution of higher education--policies, and resources.

PEOPLE: Staff must be competent, but they must also understand that distance learners differ in age, occupations, experiences, and the settings in which they study. They should be extra caring and compassionate for those who find it difficult to return to education--especially those in relative isolation. The people should be able to get along well not only with students but with faculty, staff, administrators above, beneath, and parallel to them as well.

Faculty, too, must be competent and have a real concern for the adult and distance learner. A faculty member also must know how to write--succinctly and cogently--and how to facilitate learning by helping students to help themselves.

Higher level administrators also must be sympathetic to the special problems of distance learners and the independent study mode of instruction. As deans, vice-presidents and presidents review programs and performance, they should be sufficiently committed to the concept to place it high on the institution's priority list.

POLICIES: Policies, which often reflect rather than determine the structure, can have several models. Distance learning activities can be integrated into the ongoing functions at the departmental or college level. When decentralized, distance learning then becomes inconsistent and holds no promise for those subject matter areas that are inactive. Or it can be a semi-autonomous unit with various degrees of power to implement programs depending on the issue or the personalities involved.

Even the policies regarding the administrative system are different and often more refined. Registration, the types of materials needed for instruction, the lesson models, the tracking and grading systems are all different in order to be attuned to the needs of the distance learning adult.

Other policies are required to bring stability to a distance learning program: Among these are no minimum in "class" enrollments; retention of the same textbook for at least three years; guaranteed interchangeability with campus credit courses; no maximum number of courses which a student can take; no residence requirements; and more frequent and personal intervention when a student falls behind or flounders in some way.

Time is a major factor to adult students. They must be permitted to start when they are ready, so "rolling enrollment" periods become a necessity. Adult students need more time to finish their courses because of the logistics of distance learning and the special time problems of employed persons. They need quick responses based on their time needs, not the professor's availability. And their learning must be individually paced, not bound by a lockstep system.

Policies on training are probably the most neglected of any in the institution. Yet the need for training of faculty and staff is far greater in distance learning programs than in those conducted in a traditional setting. Understanding the special needs of adults, telephone techniques for counseling and instruction, methods of formatting the subject matter, how to phrase questions, the length and quality of responses, and exposure to the computer are just a few of the areas where training is needed. Whether that training is conducted by computer, mail, or face-to-face sessions, there should be publications undergirding all the training activities.

RESOURCES: If good people and the right policies are in place, one would think that resources would naturally follow. Not necessarily. Budgets are often strained to the maximum already. But more importantly the amount of investment needed before the program is started often deters even the most committed institution. Money is needed for course development, marketing, publications, advertising, textbook inventory, staff, and of course training at a number of levels. Yet those institutions that invest these moneys in preparing and marketing the programs under a well-trained faculty and responsive staff will ultimately draw the income necessary to perpetuate the program and reach more poeple with high quality educational offerings.

The introduction of technology by an institution affects all three of these major ingredients of an operating program aimed at the adult distance learner--the people, the policies and the resources.

In the past, both audio and video have had minimum impact on the total distance learning audience. Some schools use audio tapes to supplement or repeat lectures. A number of schools, using materials from the Adult Learning Service of the Public Broadcasting System, offer telecourses. But the number using technology in these two areas relative to the total number of distance learning students in the United States is extremely small.

The reasons for this slow growth and minimum use of audio and visual materials have several explanations, some of them having to do with faculty fears, ignorance, lack of good materials, effectiveness, cost, and questions of turf.

The computer, however, will play a more distinctive role in higher education in the future. The computer will carry with it some of the intellectual baggage that has burdened audio and visual education. But unlike its predecessors, the computer will become so ingrained in every part of institutional life that literally nobody will be able to operate in the eductional setting without some computer competency or literacy.

Computers are now pervading almost every phase of American life but again, unlike the audio and the video phases of our technological life, the computer is not a passive instrument. It will modify the method of information deliver; it can store immense quantities of data for instant recall; it improves writing abilities and alters the conceptualization process; it enables students and teachers and counselors to communicate quickly and personnally with each other; and it can reenforce learning by operating effectively in the drill-and-practice mode.

The computer is particularly effective in distance learning programs. It can transform the old fashioned correspondence mode to an exciting new system of direct, quick, and cost effective communications between students and teachers.

There are many educational uses for the computer and many institutions are experimenting with computer assisted instruction and pre-programmed materials where the learner interacts with blocks of information on a disc. But no use of the computer is more exciting than the system we use with our distance learning program at the American Open University of New York Institute of Technology -- computer conferencing.

Here is how it works: The professor and the students are given accounts on our system and the course is titled, (e.g. History 101). All notes going into that conference henceforth are numbered and readable by all members of the

class. Students and professors have the option of sending personal notes to each other that will be read only by the addressee. The numbered notes sent to all conference participants are read and responded to at the time most convenient to each. There are command functions on the menu that make it easy to decide what to do -- read one of more notes, write a message, forward a note, retrieve a note, etc. The important point is that all communications between the professor and the students and between the students themselves are independent of location and time.

We have found a number of advantages over electronic mail. Notes are easily retrievable, by date, person, or number; there is a permanent record of all messages in sequence; it has branching capabilities enabling separate debates, discussions, assignments and even polling; and it most closely approximates the socialization that goes on in a classroom.

We also note some other features: an esprite de corps begins to develop between the students; there is a great deal of reenforcement and personal support; the learning process becomes more intimate and friendly.

Without the computer, we could not handle the students with the present staff we have.

For administrative purposes, we use the computer to log in the inquiries, the application data, and registrations. We match the professor to the student, have a student display of each student's total records. We use it to track lessons, monitor discussions, enter prior learning records as well as pay professors, note the dates and actions of contacts, prompt reminder letters, and cause an automatic intervention by counsellors if students stray or delay. Grades are recorded by professors and all sorts of reports are gleaned from the records we maintain. And finally, in adminstration, the computer conferencing is used to keep counselling staff, the registar's office, faculty and administration in close touch to solve problems and help with evaluation of the program, the people and the expenditure of resources.

As noted, we use the computer in instruction as a communications system between the professor and the students and between the students themselves. In our first limited surveys, we found computer conferencing brings an 85% completion rate; students average between nine to thirteen hours each on the computer which amounts to about one and one-half hours a week. We also note that the amount of time on the computer apparently bears no relationship to the final grade.

We queried the students and found that 96% would sign up again for a course using computer conferencing; that 86% communicated with other students by computer, that 82% joined other conferences besides the course which were available to them; and that 62% "talked" to the professor via computer.

We also broke down the usage: Ninety percent of the students used the communication system for course content clarification; 10% used the system for motivation and reenforcement; 4% used it for technical assistance with the computer; and 2% used it for class management and organization questions.

Every student learned the fundamentals of the computer conferencing system within one week and all of them said they had improved their writing skills.

We also use computer conferencing for counselling, either in separate "personal notes" back and forth, or in group sessions. Many questions deal with procedures and future planning of their courses, but a number of questions relate to their need for reenforcement, encouragement, and at times sympathy.

And lastly we have a library conference that identifies publications for projects, locates periodicals and is connected with other regional and national data bases.

But with all these services and wonderful uses of the computer either in computer conferencing or in computer assisted instruction, there are significant questions we should be asking ourselves.

Are we in danger of becoming elitist? If one has to have a personal computer, does that not rule out millions of people who cannot afford one? That questions already faces many school districts where wealthier districts are moving ahead with computer instruction and the poor districts are not. Students from the poor districts may be entering society with a real handicap if they are not at least computer literate.

How, then, do we undertake this vast job of making it possible for every student and every professor to have access to a computer in the future? Local libraries, schools and colleges may help us give everyone access to computers. But even then, who will undertake the vast training program needed to make the computer available to everyone. In higher education, where will we get the faculty, even if we had the

resources to train them? How do we break down intellectual barriers of contempt and fear on the part of the pedagogues? And finally, where will the money come from? Who will finance what has to be done.

The greatest danger of the computer revolution is that we will turn elitist and create a class society--of those who have the training and background to succeed in life, and those who do not. The computer is a tool and should be made available to everyone.

End

WHERE THERE'S A WILL THERE'S A WAY

Kathryn S. Atman

I have titled my remarks this afternoon "Where There's a Will There's A Way," and, in the context of individualized striving, I want to discuss briefly with you some of the areas of theory and research that I feel hold promise for the academic success of long distance learners. We will begin by examining the phenomenon of self-direction and the importance of self-knowledge or "enlightened self-direction" in the learning at a distance process. We then will consider the implications of a strong will for successful distance learning and, finally, the possibility that learning to manage oneself through systematic goal setting in a distance learning context might be both academically rewarding and fun!

One can read about self-direction. Enter any bookstore and you will find shelves of "self-help" books whose suggestions range from lists of how-to-do-it steps to extensive descriptions of successful strategies for anything from carpentry to gourmet cooking. Each author assumes a modicum of self-direction on the part of the reader - but often the direction of the <u>self</u> is not directly dealt with. What is involved in directing the <u>self</u>?. I would suggest that the key to successful self-direction lies in the use of personal information in goal-directed decision making. This process has important ramifications for learning at a distance since long distance learners must exercise 1) the capacity to set goals and 2) the ability to demonstrate a follow-through capability to assure that the goals are reached. I have called the use of personal information in these two ways "enlightened self-direction."

<u>Enlightened Self-Direction</u>

An individual moves through three stages along the route to successful enlightened self-direction. First, in what one might call the "Little Kid" stage, he/she is curious, creative and inventive. Piaget calls the first two years of life the sensorimotor stage. (1) Bright, shining things catch the eye and the Little Kid, with active senses but no "sense," reaches out to the world with an "I can do it; I <u>will</u> do it!" attitude. Immediately, parents recognize danger: Little Kids with no "sense" will self-destruct! Thus, almost before the Little Kid is able to get a handle on his/her curiosity, creativity and inventiveness the lid is tightly clamped on. Parents are the first to set limits - soon to be followed by a large number of teachers and, finally, by society itself. After all, how much

creativity can a teacher stand in a room of 32 second graders; or can society permit anyone (just because he/she is able to drive) to cruise at 90 miles an hour on an interstate?

Sadly, the Little Kid learns that Stage Two, "Compliance or Externally Imposed Limits" is the real name of the game as he/she is growing up. Actually, limits are needed! Learning to live within limits is an essential part of maturation, and society has assigned to formal education the responsibility of instructing the young in the process of political socialization. After all, if members of society do not learn to live together in some spirit of cooperation we will all be at each other's throats! An inherent danger lies in stage two. If the curious, creative, inventive part of human personality is too closely shaped or curtailed, the individual may be a "good citizen," but he/she may have lost both the capacity for spontaneity and the ability to set forth a course of action for him/herself that demands <u>self</u>-discipline, not merely compliance with the directions established by someone else - the adult figure.

This situation has important implications for distance learning! Carefully designed curriculum for distance learners assumes that each student possesses adequate self-management skills. For example, the student must be able to select an appropriate study space, must utilize necessary study skills to master the course content and must have the personal qualities of perseverence and determination to follow through with the multitude of assignments imbedded in the learning program. Success depends on these (and other) carefully orchestrated personal skills - skills that are beyond the supervisory "reach" of the distance learning instructor. If a student is to achieve success in distance learning, he/she must have moved into Stage Three in enlightened self-direction: Initiative or Internally Generated Limits.

We may be expecting too much of students when we assume that they have the skills associated with initiative or internally generated limits. Consider the management patterns found in most K-12 school settings. Teachers from preschool to secondary education are trained to make educational decisions that range from designing lesson and unit plans to managing the learning environment. There is generally <u>no</u> opportunity for students to make decisions that affect their own learning processes. Again, how much individual initiative can a teacher stand in a class of 32 high school seniors? And, if students have had no practice in managing their own learning, why should we expect them to be successful in distance learning settings where <u>their</u> ability to establish internally generated limits, not the constant prodding from a well-meaning instructor, can spell the difference between success and failure?

Role of the Will in Distance Learning

For an individual to move to the third stage in enlightened self-direction, that is, to be able to initiate or to impose internally generated limits, he/she must be motivated and have the strength of will to set and accomplish goals. Assagioli has identified various qualities of the will that are useful as it carries out its role as director of the personality: discipline, concentration, decisiveness, endurance, patience, and courage, among others. (2) In addition, Assagioli suggests that certain aspects exist within one's will. It can, for example, be strong (instead of weak), skillful (in that it "can stimulate, regulate, and direct all the other functions and forces of our being"), (3) good (as opposed to evil) and (4) transpersonal (in that it can set the ego aside, as it were, and "transcend the limitations of 'normal' consciousness and life"). (3) Assagioli proposes that with a strong and skillful will, the individual can monitor his/her own behavior - calling forth appropriate qualities needed for various situations.

We do not have time this afternoon to go into a detailed discussion of Assagioli's theory of the will (which he calls psychosynthesis), but I have described these several aspects of Assagioli's work in some detail since it appears that, in general, educators disregard 1) the existence of the will in a student and 2) the benefit that might acrue for the student if he/she has a strong and skillful will as an ally in the learning process. (In fact, some educators may not appreciate the subtle difference between a student with a strong will and a "willful" student - and who wants a room full of willful students?) Many students in traditional academic settings need a great deal of help from the instructon to become successful learners. It may be that students in the nontraditional academic setting of a distance learning program, where they must provide a good share of their own motivation and reinforcement, might benefit from specific training in the development of a strong, skillful will.

It takes perseverence and the demonstration of several specific skills for an individual to be a successful distance learner. Time management, for example, is an essential skill - as is the ability to set and accomplish goals. Stress management skills are also useful since there are many deadlines in distance learning programs that must be met. Resoluteness of purpose (a strong will) can be an invaluable assistance and may mean the difference between successful completion of a course and the ubiquitous incomplete.

Goal Setting as a Contributor to LDL Success

A crucial factor in the success rate of long distance learners may be the strength of the individual's commitment to the goal of course completion. Locke and Latham have demonstrated the necessity of setting the goal in order to accomplish something. (4) Many people set goals; not as many achieve them. Thus, it would appear that training in clearly defined goal accomplishment processes might be useful for those long distance learners who are not proficient in the skills of goal-directed decision making. The Conation Cycle (see Appendix) represents a problem solving process that depicts twelve steps associated with goal accomplishment. My experience of more than three years of student use of the model strongly suggests that individuals who consciously follows the steps from start to finish are more likely to accomplish the goal than is one who ignores steps or is unable to move from reflection (steps 1 - 6) to action (steps 7- 12).

Conation as a Fourth Domain for Distance Learning

The term, conation, is unfamiliar to many although it has a two hundred year old history in the psychological literature. Faculty psychologists in the 1700's (who were closer to philosophers than psychologists as we know them today) thought that the mind had three "faculties": cognition (knowing), affection (valuing) and conation (striving). (5) As the field of psychology developed in the United States, the pull was toward identification with the natural sciences and the use of the scientific method for inquiry. Behavioral psychologists, in particular, were more interested in stimulus/response research and discounted the existence of the will. One might say that the concept of conation "fell into disuse" - although isolated references to it can be found in the literature throughout time from the 1700's to 1985. (6).

The American Heritage Dictionary of the English Language defines conation as "aspects of mental processes or behavior directed toward action or change and including impulse, desire, volition and striving." Considering the importance of striving for successful completion of any task (particularly tasks involved in learning), it is somewhat ironic that the phenomenon of conation has received so little attention from educators. A reasonable explanation appears to be that the emphasis on behaviorism in educational psychology, coupled with the perceived role of the teacher as the lesson designer/classroom manager, left no room for student initiative and self-direction in the learning setting. Since most of us spend our entire adult lives making decisions and solving problems, it may be unfortunate that for twelve meaningful years students have little chance to practice those particular skills.

Theory and Research Related to Distance Learning

Two pilot studies conducted at the University of Pittsburgh shed light on 1) the psychological type profile of students who enroll in distance learning courses and 2) the type of conation-related counseling, based on psychological type individual differences, that may lead to success in course accomplishment.

In the fall term, 1983, a study was undertaken in the University External Studies Program to examine selected characteristics of 195 UESP students, (those (91) who had taken six or more courses in the program as well as those (104) who had registered for their first course) to determine what factors might be a help - or a hinderance - in the students' successful achievement within the existing distance learning program structure. Sixty one students (31%) returned the test packet (thus voluntarily participating in the study): 33 from group one (6 or more courses) and 28 from group two (newly admitted). (7)

Students in the study were asked to take the Myers-Briggs Type Indicator (MBTI) (8), a self-report inventory based on Jung's theory of psychological types. (9) We had hypothesized that psychological type differences might account for the "staying power" of those students who repeatedly, and successfully, took courses via external studies. Jung has proposed that specific psychological elements: extraversion or introversion; sensing or intuition; thinking or feeling; and judging or perception combine to form an individual's "type." Sixteen type combinations are possible.

The small number of participants made it impossible to generalize concerning "type" and the external studies mode of instruction. However, the outstanding single characteristic of each of the groups of participants (a combined total of 69% as measured by the MBTI) was judgment. Lawrence writes that the individual who prefers the judging process "likes to have a plan, to have things settled and decided ahead; tries to make things come out the way they 'ought to be'; likes to finish one project before starting another; usually has mind made up; may decide things too quickly; wants to be right; lives by standards and schedules that are not easily changed." (10) This would appear to be the type of student who would do well in distance learning courses. The opposite type of student, if one were to paraphrase Lawrence's description, would be one who "does not like to have a plan, to have things settled and decided ahead ..." Clearly, a substantial number (31%) preferred not to be organized! Assuming that personal organization skills are important in the distance learning

setting, then it is reasonable to provide an orientation program that highlights specific time and space organization skills for those students who need them.

Preliminary data from a second pilot study with implications for counseling distance learning students suggests that psychological type differences are related to the goal accomplishment process itself. Individuals whose type preference was extravert/sensing/thinking/judging (ESTJ) indicated on the Conation Potential Index (CPI) (Atman, 1985) behavioral strengths in evaluating data; having a strong purpose; setting goals; and recognizing needs, problems, challenges and opportunities. Individuals with the opposite type preference, Introvert/intuitive/ feeling/perceptive (INFP), indicated behavioral strengths in assessing risks; making things happen; recognizing needs, problems, challenges, and opportunities; and generating alternatives. (11) Neither type was strong in all areas. If we want students to be successful in the goal accomplishment process, we may need to provide a counseling program that takes individual differences (based on psychological type elements) into account.

Research using the Conation Potential Index (CPI) is underway with selected adult and undergraduate populations. Data indicates that 1) individuals respond well to goal accomplishment training and 2) the process of goal setting can be easily integrated into an existing course format.

Survival Skills for Long Distance Learners

We all learn to comply: first, with the demands of parents and then with a series of 'authorities.' Through the internalization of many rules, policies and procedures, the structure of society is impressed upon us. We learn to stop at red lights, to mail in our income tax statements by midnight on April 15, and to communicate using a systematically-derived symbol system. If we are fortunate, we may - as we grow older - also become wiser. Some call this the maturation process; Jung called it the process of individuation. (12)

Through individuation, individuals develop - over time - all aspects of their personalities: those areas where they are strong as well as those areas where they are weak. The result is the ever-strengthening process of self-integration, where the individual has the strength and skill to call forth a variety of appropriate behaviors, depending upon the need. The individual also has at his/her command an unusual array of 'survival skills' which not only promote competent behavior but also provide the flexibility needed to withstand conditions of ambiguity and uncertainty. The type of survival skills I am referring to include:

1. Appreciation of the function of the WILL
2. Identification of individual (type) differences
3. Understanding of intrinsic motivation
4. Development of a healthy sense of humor
5. Use of centering (relaxation) techniques
6. Encouragement of self (and others)
7. Getting Your Act In Gear (activate flow)

My remarks this afternoon might well have been subtitled: A Case for Conation and Other Dimensions of Intrinsic Motivation. Deci (13) has pointed out that a basic need of individuals is the need to create challenging situations - and then to resolve them. Csikszentmihalyi (14), in addressing this same issue, proposed a theoretical model of enjoyment in which the individual moves into an autotelic, self-satisfying condition called flow when there is a 'good fit' between the level of challenge and the level of skill available to meet the challenge.

It would seem that through developing the capacity for striving, through developing the will so that the wide range of the individual's potential skills can be actualized, and through learning how to set and achieve goals, an individual may also learn that both the product of learning as well as the process itself can be satisfying and fun!

Implications of the Conative Domain for Learning at a Distance

Success at distance learning can be achieved when students accept responsibility for managing their own learning process. We can assist them in this process by encouraging them to analyze their own learning behaviors. For example, when a student receives a low grade on a test, he/she should be encouraged to reflect on the type of study skills selected for the project, the setting where study was undertaken, the length of time spent in study as well as the quality of the time spent. Did he/she attempt to study while watching television? listening to the radio? while there were five other people in the room carrying on a conversation? As a result of many years of teacher-directed study, students are not accustomed to reviewing and evaluating their own behavior. However, a carefully designed counseling or orientation program will go a long way toward developing in students the kind of self-monitoring skills essential for distant learner success.

Perhaps the most important implication of the Conative Domain for distance learning lies in the role of the instructor. Traditionally, teachers have seen themselves as 'guardians of the knowledge base' with the prime responsibility

of transmitting that knowledge to the student. This aspect of the role is of great importance. There are, however, other aspects of the role that must be considered - particularly in a distance learning setting where the student's capacity for self-direction can be augmented through a carefully orchestrated experiential learning sequence. Kolb has identified four steps in experiential learning: 1) participation in a concrete experience, 2) reflection on that experience, 3) understanding of the abstract, theoretical basis that underlies the experience and 4) based on that understanding, the design of a plan and the active experimentation in the implementation of the plan. Kolb also describes the conditions which facilitate experiential learning and suggests that the instructor must also be a coach, a colleague, and a process facilitator. (15) Conation, the behaviors associated with action or change, can be taught (and can also be 'caught') from a mentor who participates enthusiastically in conation-related experiential learning processes with his/her students.

Conclusion

The bottom line for adults is self-direction! Somewhere along the path of growing up, the Little Kid, for whom the world was once full of bright, shining objects to be grasped, may learn 1) that an unusual mixture of goal setting and self-discipline can result in a pattern of goal accomplishment that is rewarding and fun, and 2) that the striving that first may be the result of complying with externally imposed limits can be redirected to initiation and internally generated limits with the result that the 'goal once set is the goal achieved.'

We live in a nation of unparalled opportunity. The organizational format of distance learning programs is ideally designed to enable individuals to avail themselves of the knowledge and skills needed to set and achieve goals. What is more, through striving in the goal accomplishment process itself, individuals have the opportunity to realize the best development of their abilities, skills and talent. Learning at a distance provides a unique setting where the specialized knowledge of the instructor can interact with the student's focused energy to produce learning of high quality.

People usually do what they decide to do - if they have the skills to sustain the effort. By incorporating skills drawn from the Conative Domain in distance learning programs, we will enable students to learn the "content" and also the process of self-direction as well. Where there's a will - a stong, skillful will - the student will achieve success and distance learning programs will flourish!

REFERENCES

1. Piaget, Jean. and Inhelder, Barbel. The Growth of Logical Thinking from Childhood to Adolescence. New York: Basic Books, 1958.

2. Assagioli, Roberto. The Act of Will, New York: The Viking Press, 1973, pp. 19-34.

3. Ibid, pp. 35-131.

4. Locke, Edwin and Latham, Gary. Goal Setting: A Motivational Technique That Works, Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1984.

5. Hilgard, Ernest R. "The Trilogy of Mind: Cognition, Affection and Conation," in Journal of the History of the Behavioral Sciences, 1980, Vol 16, pp 107-117.

6. Atman, Kathryn S. "GETTING AND KEEPING YOUR ACT TOGETHER" A Case for CONATION: A Metadomain for Educational Theory and Practice," in ed. John M. Gould, Networking for the Future: Preparing for Human Success, Washington, D. C.: Educational Leadership Council of America, Inc., 1984.

7. Atman, Kathryn S. "An Investigation of an Individual's Locus of Control, Psychological Type and Conative Capacity as Possible Predictors of Successs in the University External Studies Program," Final Report, University of Pittsburgh, June 29, 1984.

8. Briggs, Katharine C. and Myers, Isabel Briggs, Myers-Briggs Type Indicator, Palo Alto, CA: Consulting Psychologists Press, Inc., 1943.

9. Jung, C. G. Psychological Types, Princeton, NJ: Princeton University Press, 1971.

10. Lawrence, Gordon. People Types and Tiger Stripes, Gainesville, FLA: Center for Applications of Psychological Type, Inc., 1979.

11. Atman, Kathryn S. "Individuation Through Enlightened Self-Direction," Presentation at Association for Psychological Type National Conference, Chicago, IL, June 25, 1985.

12. Jung, C. G. Op. Cit.

13. Deci, Edward. Intrinsic Motivation, New York: Plenum

Press, 1975.

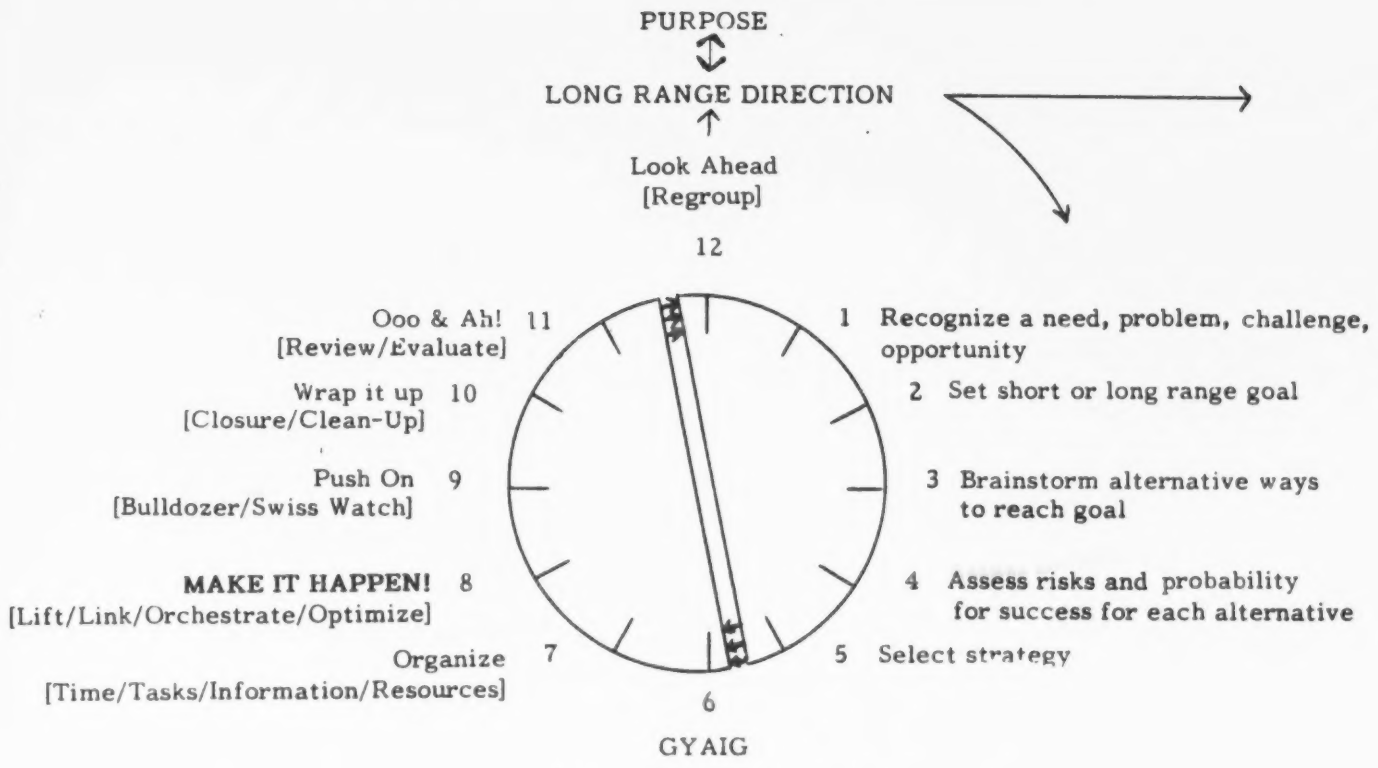
14. Csikszentmihalyi, Mihaly. Beyond Boredom and Anxiety, San Francisco, CA: Josey-Bass Inc., 1975.

15. Kolb, David A. Experiential Learning, Englewood Cliffs, NJ: Prentice-Hall, Inc., 1984.

APPENDIX

THE CONATION CYCLE

A THEORETICAL MODEL FOR GOAL ACCOMPLISHMENT



CONATION = VECTORED ENERGY

= ENERGY WITH DIRECTION AND MAGNITUDE

= THE DOMAIN OF BEHAVIORS ASSOCIATED WITH STRIVING AND WILL

Copyright 1982, 1985 Kathryn S. Atman, Ph. D.

Distance Learning - The Near Future

Dr. Michael Moore

It is of course foolhardy to offer speculations about the future in this or any other field of human endeavor. Perhaps I am particularly sensitive to the fallibility of man's predictive powers because I started my academic career as an economist. Surely you can understand how anyone who had suffered the failures and indignities of that profession must feel about any attempt to design models of the future when the variables at hand are even more unspecific and hard to measure than they are in the "dismal science" of economics.

Even the near future of distance education is heavily dependent on developments in several related fields, most notably the attitudes towards continuing and extension education among educators generally, on government policies on these, on realignments between work and leisure, on broader political, social and economic developments, and on changes in the nature and use of communications media.

I am going to assume that none of these parameters is changed profoundly; this is not in itself a particularly safe assumption, since some new discovery affecting power supplies or longevity, or some traumatic international political upheaval are examples of quite imaginable events which could change the world in which we are working, and make nonsense of what are now our most carefully considered predictions about education.

Making those assumptions however, as we must, we are left with a situation which is within our control. The future, that is the short term future of some ten to twenty years, is largely dependent upon the will and the decisions

of educational policy makers and educational practitioners like ourselves. It is we who will decide or we who will influence others who decide the future of distance education, and we will decide both by what we do, and perhaps we will influence decisions when, as at times in the past, we fail to do.

For the next few years, into the early 90's perhaps, distance education will continue to be a subject of special interest, a curiosity even, a subject of discussion raising both excitement and skepticism. Prophets and false prophets will rise up and pass away. Schools of thought will come and go. New organizations and methods, books and journals will be started up.

Within a few years however, perhaps a decade, distance education will have become a very significant part of the educational universe, and will cease to be a subject of special comment, be no longer a curiosity. The distinctions between distance and traditional education will become blurred and recede into memory.

This will coincide with the growing acceptance by both educators and public of the notion of universal lifelong education.

Lip service is paid to lifelong education; it is a concept more widely accepted than we could have imagined some twenty years ago. Yet for most of America's people, and for nearly all the rest, lifelong education is at the best an unsystematic, unorganized, rather chaotic, individually pursued ideal. Programs are snatched off an institutional peg, more often ill-fitting than not, or are personally worked out self-learning projects, as good as can be expected but by no means as good as possible in a properly organized, universal lifelong education system.

For the forseeable future the adult years of lifelong education will continue to take second priority to the education of children. However the pressure from both educators and public for a more systematic provision of adult continuing education is going to increase. On this there can be no doubt.

It is largely because traditional educational institutions have found it impossible to meet even the demands for adult education which have been expressed in recent years that distance education has enjoyed its recent remarkable growth. The educational needs of the adult population are almost infinite; they are all very specialized; they don't fall neatly into borders, either academic, geographic or school board. Except for the most common, the most gross of learning needs - for example the needs of groups of immigrants to learn the English language - it is quite impossible to meet adult learning needs in large numbers by traditional educational methods. Only through distance education methods is large scale, individually supported, adult education possible. As the pressure for such education increases, so governments and institutions will adopt distance education methods, and distance educators and distance technology will become fully integrated into the mainstream of educational practice, to meet the continuing education role which the great majority of institutions will have to play in the era of lifelong education which is ahead.

In the dozen or more countries where historical circumstances have determined the establishment of large autonomous distance teaching

institutions alongside more conventional schools and universities, I would expect some to continue, becoming the prestigious models of distance teaching. As distance education for lifelong learning is taken up by conventional institutions, some of the specialist distance institutions will change their roles to become resource centers and research centers, or schools for training and for the education of distance educators for the other institutions.

While, as I have said, distance education will be incorporated more widely as a method by education generally, I believe the relationship between specialist distance education institutions and others will become a closer one. As the recognition grows of the symbiotic relationship between distance teaching and face to face counselling and instruction, so traditional institutions as well as, or instead of providing their own distance programs, will provide human support to learners engaged in study, or some part of their study, with distant educators through the distance media. So I see a generally cooperative and creative relationship between the traditional and the new; the traditional taking on more distance education and the two kinds of institutions working in the future in closer partnership than ever before.

Another very important trend will be an increasing specialization of distance education institutions themselves with local institutions providing what they consider to be the important adapting and modifying functions necessary to accommodate highly structured distance materials to local and individual needs.

In the scenario I have drawn I see the State of Wisconsin - for example - having a wealth of programs for the lifelong learning of adults, provided with a distance education component at 3 different levels. At the most local level the school board, the vocational-technical college, hospital, library and others will have their own distance education programs, developed by their own distance education personnel and delivered within a limited geographical area. The university will deliver a statewide program, in an almost infinite array of learning areas, with programs developed by its content specialists, and its distance education specialists in collaboration with specialists from every state agency, organization and voluntary association. Networks of local collaborating agencies will provide learner support and study facilities for learners using this statewide system. Finally the university would act as the state agent for the organization of learning programs delivered from national distance education resource centers located anywhere within the United States. It is inevitable that there will be by the end of the century, and perhaps before, one national center for the distance teaching of, let us say, biology, one for courses in aging and the care of the elderly, one in one aspect of the continuing education of pharmacists, and another in another aspect, and so on. The trend to national provision at a distance of at least some part of continuing education programs, especially professional continuing education, is an inevitable consequence of both the increasing need for specialized content and the capacity of distance education to provide highly specialist content over a wide area. It remains to be seen whether the new needs and opportunities for teaching on a national scale are seized upon by the schools

of the private sector, who have been the best national providers, especially in vocational areas since the beginning of correspondence education or by business corporations themselves, or by the universities. Most likely it will be some combination of all three, though as a university man myself, I fear our decision making procedures might well cause us to run a weak third position in this particular race.

It is time, as many of you recognize, for a revision of our views on the Wisconsin Idea that the boundaries of the campus are the boundaries of the state. This remains as true in many ways as it was when introduced as a great revolutionary concept in the 19th century, but it is now a view which could become a burden on us. With distance education, the boundaries of this campus will in fact be the world. With distance education there need be no boundaries, and while I do not think mankind will be ready for more than limited experiments in trans-national education in the near future, there are no more severe technical barriers to our acting as a world resource than there were in the 19th century to our serving the farthest reaches of this state. In the foreseeable future however, what is imperative is to lower the state boundaries so that we extend the educational hinterland for each of our university extension programs. This might not be a welcome idea to some, but it cannot make sense in the 21st century for the University of Wisconsin to attempt to teach all forms of continuing education to the citizens of this state, for other institutions to do likewise for Iowa, for Kansas, for Illinois, for Minnesota, Michigan and so on. Distance education is most effective when organized on a large scale; large scale organization permits

specialization. Specialization allows on the one hand a wider range of programs than can be provided by any one institution alone, and equally importantly it permits higher quality programs; incidentally it also provides cheaper programs.

I will refrain from speculating further on the extension of this principle to the possibilities for international specialization and collaboration, desirable though they are, because it's probably looking far enough to suggest even specialization at a national level, and development of national systems for this country. Such international collaboration might come about in western Europe, although there are exciting developments in this in South America, with which perhaps the U.S. will become associated sometime later.

The three levels of provision I have spoken about, local, state and national would obviously be complementary and not competitive - the key to understanding this being the level of content specialization. Local distance education programs will be of a lower level of specialization than state programs and the most specialized course will be provided at national level. It is because there will be very few students of say 19th Century American Labor Relations, that makes such a course nonviable at any but the national level. A course in Swahili might be viable at state level and not at local level, but locally there could well be adequate demand for a French course.

What about provision by such extra-educational institutions as business and industry? This is likely to continue with national corporations providing direct instructions to their own personnel. How far it proliferates will

depend on the readiness of educational institutions to adjust to the need for large scale, national programming in this area.

It is quite conceivable that a university like UW will take on a distance education role for a national corporation, or a consortium of corporations - a particular business or industry, delivering instructional programs to offices and work places with local supervisors providing the learner support role. The demand for such teaching on the part of business will increase, and if the work is not taken up by educational institutions, corporations themselves will establish their own distance education programs. As a result of neglect by the universities this trend is already well established and it might even now be hard to reverse.

What media will be used? The bigger the scale of provision, and the bigger the organization, the more likely it is that we will develop truly multi-media teaching systems. At the local school level we are likely to see the continuing of single media teaching or at best a limited media mix which is unfortunate. (With widening training in distance teaching methods however, even at local levels there is reason to hope for greatly increased quality in the use of each medium.) The basic medium of study and teaching I believe is likely to remain the printed word. This is very contentious I know and there will be those among you who have greater hopes for teaching by the broadcast media by teleconference methods and by computer. The ideal which I am sure will become far more common than now is a carefully designed mix of all or

many media. This rich mixture will become more common as a result of falling costs of media hardware and software, as we have already seen dramatically illustrated in the case of the audio cassette, and also rising familiarity and competence in teaching by media on the part of educators, assisted by educational technologists. The media mix of the near future is going to provide educators with the power to achieve two great, hitherto incompatible and unachievable educational ambitions - at the same time to provide highly individualized, indeed largely learner controlled and learner directed programs on the one hand - and to do it for the large mass of the population. The aspiration which technology makes possible is individually supported, lifelong education for all who want it.

The key of course is the personal computer. When wired to the university's main frame computer or the computer of any distance education institution, an infinitely complex profile of each learner will be built up; this will contain not only a record of every learning project, formal and informal undertaken in the life time, but data on learning style, cognitive style and abilities, attitudes, aspirations and motivations. The computer will know each learner in a way that only the private, personal tutor of the most privileged could know hitherto. The learner will be able to obtain impersonal, disinterested advice and counsel from the computer before deciding on particular programs of study, or if he/she so wishes the computer generated data could form the basis for consultation between learner and human counsellor. Since the computer knows the learner's predilection for study by print, by audio and visual media and so on, an optimum mix of study materials

will be prescribed for every learner, and since materials can be despatched by the computer and feedback can be received and processed by the computer, each learner will be free to determine when to begin a program and at what pace to proceed. Consider the potential of the computer as a source of information about learning resources. Human advisors know only a part of the literature in a small area of human knowledge. The lifelong learner can access, in the future, a file of virtually all the world's literature. She can ask for a book, a journal article, a film, an audio tape from almost any source on any subject and have it delivered by cable or satellite or in print almost instantaneously.

I found myself in discussion last week with a group of graduate students on the subject of theory of theory. I went away, tried to remember the title, author and source of a particular article on the subject, found it, copied it, and a week later distributed it so the discussion could continue, only better informed. Only I had the knowledge to make that contribution, and it was no better than my knowledge allowed. In the future the individual learner, or the learning group like ours, will access the literature and have delivered the same, or possibly better material, instantaneously, in reply to no greater skill than the use of the keyboard and knowledge of using a computer file. In case this all sounds too impersonal and mechanistic, let me add again that for the learner who chooses human interaction, or for educational goals in which human interaction is desired, the human instructor and the peer learner is a significant component of the total mix of instructional resources available. Like all other resources, the tutor and fellow learner is brought into play whenever, and only when, they are most appropriate for the educational task.

My vision therefore places learning under the control of the learner with the computer acting as the major source of data for guidance and acting also as accessor to the instructional resources. These resources include human helper, study guidance in print, audio and video tapes and discs. I see a diminishing role for broadcast television and radio in the future of highly individualized mass learning. I do however see audio and video materials being transmitted to the learner's home by cable or other direct method transmission. I see the audio and video teleconference among participants in a particular program, and in the immediate future I see a period of special interest in the potential of the home computer as a means of data transmission via telephone and also as a means of interaction by keyboard between learner, teacher and fellow learners.

Thus the sequence which I see unfolding is as follows: In the immediate future educational institutions will learn the benefits of integrated multi-mediated instruction and will produce programs in which print and electronic and human resources are closely articulated. For a while learners will be left to organize for themselves the best mix of these media, but quite soon educators will attempt to identify optimum mixes for learners of different learning styles.

I think it is important to continue the research into learning styles and indeed into all psychology of learning at a distance. In this area, though, there is need for a high degree of caution and need for very careful research design. The quest for understanding of the complexities of the human learner has made considerable progress, but if the child is complex, adults are almost

infinitely variable. We have a number of theories about adult personality, adult learning, motivation, the effects of attitudes, values and social circumstances. I doubt if we will in our lifetimes see the time when we will be able to recommend with complete confidence a particular program or method of learning purely on the basis of a measure of learning style or any other psychological variable. We are as unsure at present about the nature of learning styles - and even more of the cognitive styles which underlie learning styles - as medieval astronomers pondering the structure of the night sky. We give labels to entities which may not exist; we take measures which ultimately reveal nearly all the variance in the learner's behavior "unexplained." So let us go forward in this research, but let's not delude ourselves that in the very near future we will be able to design programs to fit specific learners, nor predict with great confidence the learner's achievement, nor have more than a basis for very tentative guidance when we give counsel. In our research into the nature of distant learners I believe we have barely begun. However, in time when the computer is applied to lifelong learning as it is already becoming used for example in individual health care, it will be the tool for mass individualized learning.

As is often the case in education, the tools to do our work better are at hand and await our readiness to use them. It is the will, the decision to act, to organize our delivery of distance education and to take advantage of modern technology, which are lacking. Before we will enjoy the benefits of mass lifelong learning aided by distance education, we have to overcome our

own fears and uncertainties about the use of technology, a process of self-education which it is obvious has been underway for several years now, and is gathering pace. I believe the near future will see this education proceed at two levels, the formal and the informal. Informally I hope that departments in this and other universities, in schools and colleges and in organizations outside education will be stimulated and encouraged to try out the ideas of distance education. In this way a growing number of individuals will discover the benefits, and also the limitations, and above all will acquire confidence and a friendly approach to distance methods. This is a phenomenon one observes at the present time and I have seen some notable conversions from antagonism to friendliness to distance education on this campus, and it is a trend I am sure will continue.

At the somewhat more formal level, I hope there will be more structured deliberations like those of the conference. Faculty seminars perhaps will set out to examine the practical benefits and problems of introducing distance education into the work of the departments of this university, especially in meeting their obligations to the community outside the campus including the very important business and industrial community. The key I am sure is the small course team of faculty and educational technologists, sometimes attached to and working with the specialist staff of a collaborating agency, including business corporations and industries. Perhaps this is a particularly opportune time for such developments. I refer to the integration of Extension faculty and the extension mission into the teaching departments of the university. I would expect these new faculties to rethink, or at least

reconsider their extension mission for the remaining years of the century, and surely distance education will be an obvious option for their consideration. Where are the technical specialists? In Divisions of Independent Study, in teleconference, broadcasting and computer centers, in design studios and institutions of education and adult education departments. And too often it seems, they are isolated there. A major development of the immediate future - I mean tomorrow - has to be some kind of bringing together both physically as well as organizationally, the various specialists who are needed in support of any proposed distance education program.

At the more formal level, and associated with the kind of activity I have suggested above I am certain that in the world at large, but I hope in this university in particular, we will see in the next 5-10 years a significant expansion in the number of courses taught about distance education, and an expansion of the quantity and improvement in the quality of research being done. A Center for Distance Education Development and Research will become a feature of this, and I dare say, most university campuses within the next 5 - 10 years. At this university I have taught graduate seminars in distance education for a number of years, and Professor Wedemeyer's seminars in independent study were almost certainly the first graduate studies in this field in the world. Today there are research centers in distance education in several countries with the best work probably being that of the German centers; we have three journals; Distance Education which is published in Australia but has an international content; Teaching at A Distance has an international readership but is of largely British content; Epistolodidactica

is a journal read mainly in western Europe. There are programs for training practitioners in distance education in several countries and a Master course in academic study of distance education is being taught in Australia. Similar courses, teaching distance education by distance education methods are either proposed or under consideration in Europe, in Australia, in South America, and at least one university in this country.

The future beckons to American universities to meet and advance upon these foreign initiatives. There has to be an American journal of distance education in the immediate future. There has to be one or more information clearing houses similar to the International Documentation Center in Great Britain. Nowhere is graduate study in such fields as adult education and communications as well established as in this country and it needs only some modest decision of our university policy makers to establish more graduate courses and graduate research. Then distance education will benefit from the scrutiny of research; some of our procedures might not survive this scrutiny; new methods and techniques will present themselves; a stronger theoretical framework will be established, and the relationship between distance education and general education will become clarified. A vast range of variable interactions await examination, but the next two decades will see increasing research to identify the optimum mix of distance media for teaching learners of particular cognitive and learning styles, various personality and instructional attributes and teaching in various subject areas.

Distance education requires a considerable element of self direction, self motivation, self planning, self-discipline in learners. The attitudes

and skills of self directed learning have always been highly prized and promoted in education, especially at the university level, but our educational systems have generally been unable to include these attitudes and skills in their mainly child focused and authoritarian curricula and methods. This will change in the future. As new generations learn to study at a distance as a matter of course, the attitudes and skills of self directed learning will become common, with inevitable effects on teaching style. In particular the idea of the teacher as source of information will give way at last to a recognition that information is only efficiently retained in print and electronic depositories, and the role of the teacher is to counsel and in other ways give help to the learner in the pursuit of knowledge. The old relationships between teacher and learner will change at last for the better for both. Research will clarify these relationships, particularly telling us just what can best be done by distance education methods and what by face to face methods so that each may make its best contribution to the common educational mission.

In this commentary I have avoided any speculation on developments in the communication media and their impact on distance education. I have had to overlook some important educational issues such as the need for a network of advisory-counselling services and the need for a national accreditation system to overcome credit recognition and transfer problems. These are details, important though they are. I have indicated three broad themes of importance. They were the drawing together of distance and traditional education to meet the new needs of lifelong learning, the incorporation of the micro-computer as a tool for individualization of mass education, and the growth of research,

publication and professional training and graduate study in distance education. I believe all these are achievable in the forseeable future. The only question being when. Distance education will begin to make its contributions sooner if those who determine policy at the national and state levels remove the prohibitions on inter-state educational commerce; sooner, if our university and university extension leaders and faculty give up any remaining vestiges of prejudice against learning which is unconventionally acquired; sooner if academics will adjust their mode of communication from the academic lecture or article and learn how to communicate difficult ideas in sometimes simple ways; sooner, if we study the needs and responses of the real adult learners in our cities, countryside and business organizations; sooner, if we determine to take the communication revolution seriously and aggressively and purposefully organize our new knowledge about media and educational technology. These things will happen in time inevitably. But surely it is for the university to take a lead and guide our progress. And if it is the university's task, is this University of Wisconsin and the associated educational institutions of this State of Wisconsin prepared to lose its leadership in this field? The time is ripe for new action, and I hope this conference will stimulate a fresh wave of thinking and action, so that what lies so obviously in the future becomes reality in the very near future.

0365c